

# **Service Manual**

## **LCD Monitor S1909WXf**

**Service Manual Versions and Revision**

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**Dell S1909W Service Manual**

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## Chapter 1- PRECAUTIONS & SAFETY NOTICES

### SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper use or installation may cause damage to the monitor as well as to the user.

#### WARNINGS:

- This monitor should be operated only at the correct power sources indicated on the rating label on the rear cover of the monitor. If you're unsure the power supply in your residence, consult your local dealer or Power Company.
- Use only the specified power cord that comes with this monitor.
- Do not try to repair the monitor by yourself, as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- Do not remove the monitor cabinet. There is high-voltage parts inside that may cause electric shock to human bodies.
- Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
- Put your monitor only in a lean, cool, dry environment. If it gets wet, unplug the power cable immediately and consult your closed dealer.
- Always unplug the monitor before cleaning it. Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the class screen.
- Do not place heavy objects on the monitor or power cord.

### PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts, which do not have the same safety characteristics as specified in the parts list, may create shock, fire, or other hazards.

### SERVICE NOTES

- When replacing parts on circuit boards, clamp the solder wires around terminals before soldering.
- Keep wires away from high voltage, high temperature components and sharp edges.
- Keep wires in their original position so as to reduce interference.
- Adjustment of this product please refers to the user' manual.
- Use Pb free solder wire for circuit board preparation.

## **Chapter 2- SERVICE TOOLS & EQUIPMENT REQUIRED**

1. SIGNAL GENERATOR
2. MULTIMETER
3. SCREW DRIVER
4. OSCILLOSCOPE
5. Soldering IRON
6. SOLDER (Lead free, RoHS compliance)
7. Color Analyzer
8. Fox\_VISP\_Programmer
9. Fox\_VEDID\_Programmer

## Chapter 3- CIRCUIT THEORY

### Block Diagram

There are 2pcs PCBA in this monitor, one is power& inverter&Audio board which is a single layer board, one is keypad which is OSD control. The system function block diagram as below

This PWA is included switching power supplier, inverter for CCFL and interface board.(fig.1)

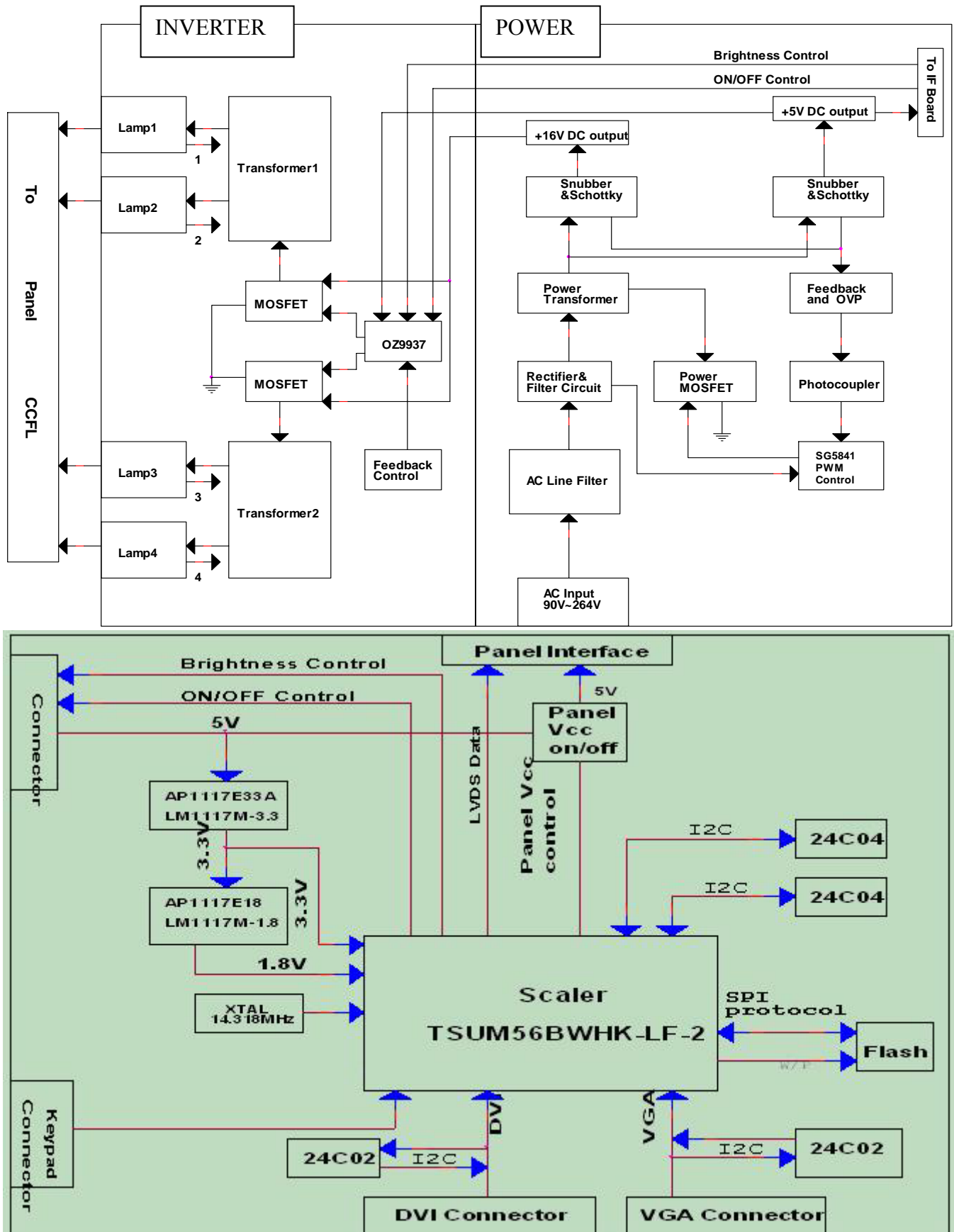


Fig.1

## Electronic Circuit Theory

### 2.1 Inverter PWM circuit

#### 2.1.1) Inverter Control circuit :( fig.2)

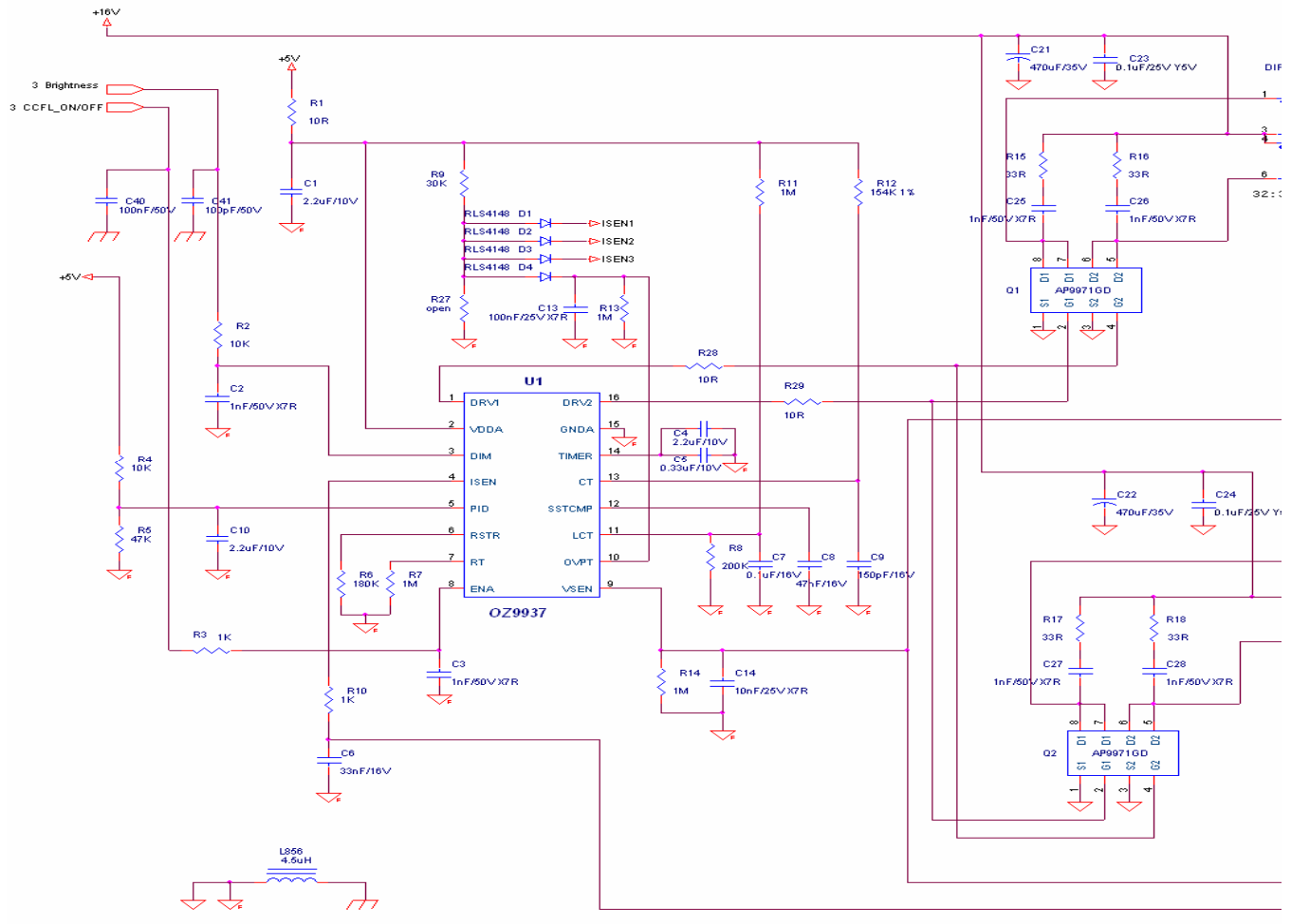


Fig.2

DC\_5V through R1 and C1 will provide power for U1 on the pin2 (VDDA).

EN-ON/OFF voltage signal coming from scalar which is on IF BD will enable U1 to work. This applies a level greater than approximately 2V to pin8 (ENA) enables the IC, A voltage less than 1V will disable the IC. R3 is used to limit current.C3 and C40 is used to dump noise.

The soft-start function is provided by connecting C8 to pin12(SSTCMP), In the start-up mode, current charges C8, its voltage controls the gradual increase in power to the transformer and subsequently to the output load, this reduces in-rush current and provides reliable operation to the CCFL.If no current is sensed approximately 2 seconds, U1 shuts off. Once the voltage at the pin4 (ISEN) reaches the lamp on threshold, the IC switches from the striking mode to the normal operation mode and the PWM dimming control is activated.

DIM-ADJ duty cycle signal through R2 and C2 is on Pin 3(DIM), which adjusted will can change the brightness of Panel.C41 is used to dump noise. Internal LPWM dimming control is determined by R11 and C7 connected to LCT (pin11), analog dimming is implemented by providing a DC voltage to PID (pin5).

The striking frequency is determined by R12 and C11 connected to Pin 13(CT) and R6 connected to RSTR (Pin6).The operating frequency is determined by R12 and C11 connected to Pin 13(CT) and R7 connected to RT (pin7).

DRV1 and DRV2 of U1 are used to drive Q1 and Q2. DRV1 and DRV2 are controlled by build-in PWM IC. Q1 and Q2 are switches which has two build-in IGBTs. The working principle of circuit of T1 and T2.

## 2.1.2) Output Circuit and Protection Circuit :( fig.3)

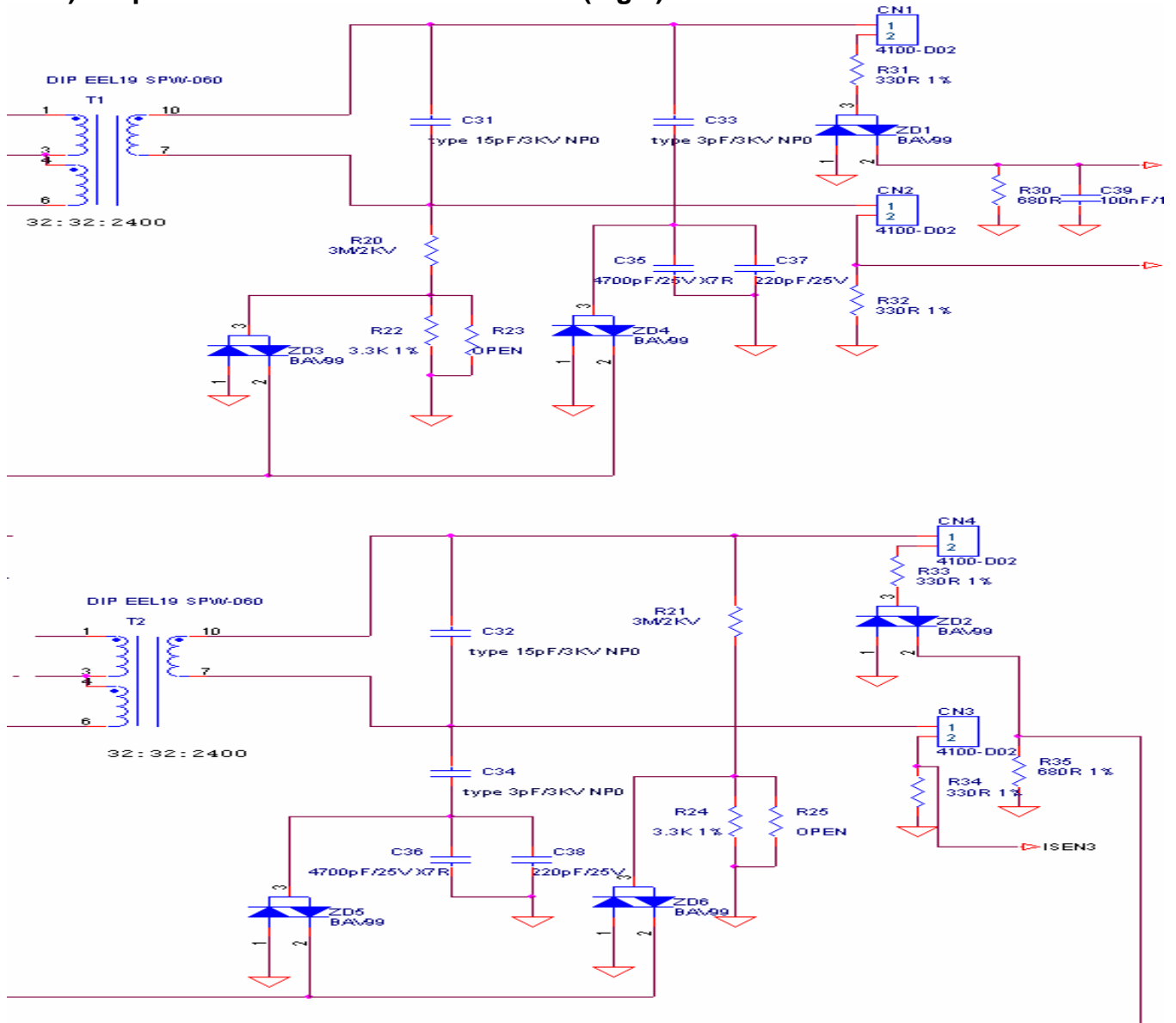


fig.3

The transformer (T1/T2) secondary winding leakage inductance and output capacitance (C31/C32) forms a lower pass filter, which converts the square-wave driving signal into a sinusoidal output voltage signal for CCFL.

The over-voltage protection feature is implemented by using an external capacitor divider (C31/C32, C33/C34) or resistor divider (R20/R21, R22/R24) to sense the output voltage. The divide-down voltage signal is sent to the IC Pin9 (VSEN), thus regulating the output voltage.

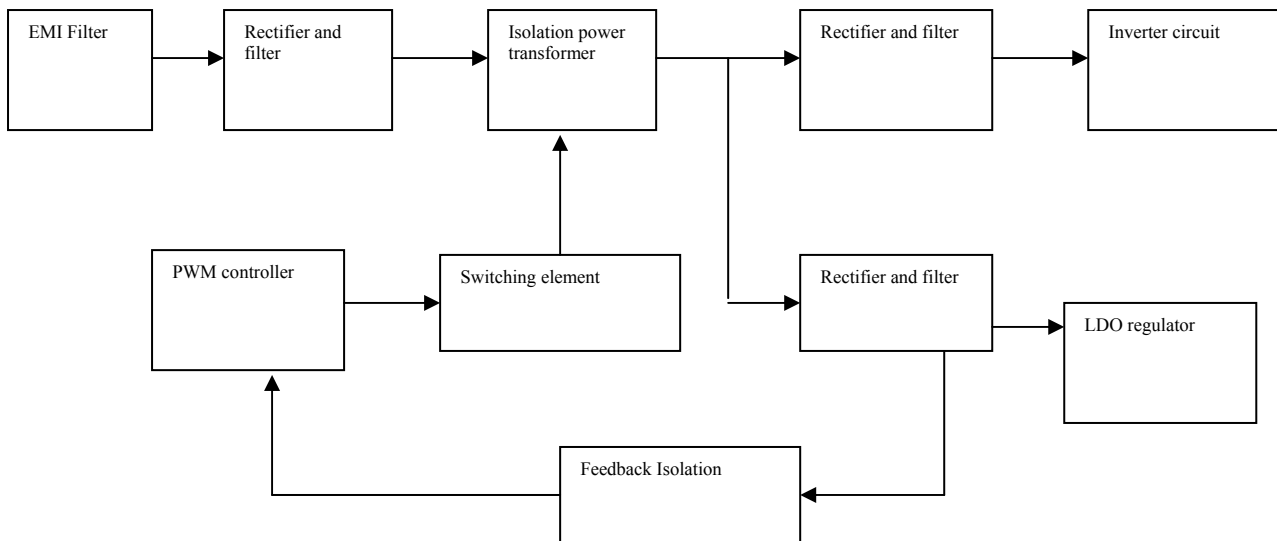
The voltage signal on negative pole of ZD1 sensed through R35 comes to Pin4 of U1 (ISEN). The CCFL current detected at resistor R35 is converted to a voltage level and input to the ISEN pin. C6 is used to dump noise. Once the CCFLs are ignited and current is sensed through resistor R35, capacitor C6 performs the loop compensation function. The voltage at IC pin12 (SSTCMP) controls the drive duty cycle of the power MOSFETs to regulate the CCFL current.

If a CCFL is removed, fails or damaged during normal operation, CCFL current is no longer sensed and the voltage on ISEN pin drops. Once the voltage at the ISEN pin is less than the lamp "on" threshold, the shutdown timer is activated. The IC maintains the output voltage for approximately 2-3seconds and once the timer expires, the IC will shutdown. To restart the IC, either toggle the SST\_CMP pin or recycle the power on the VDDA pin.



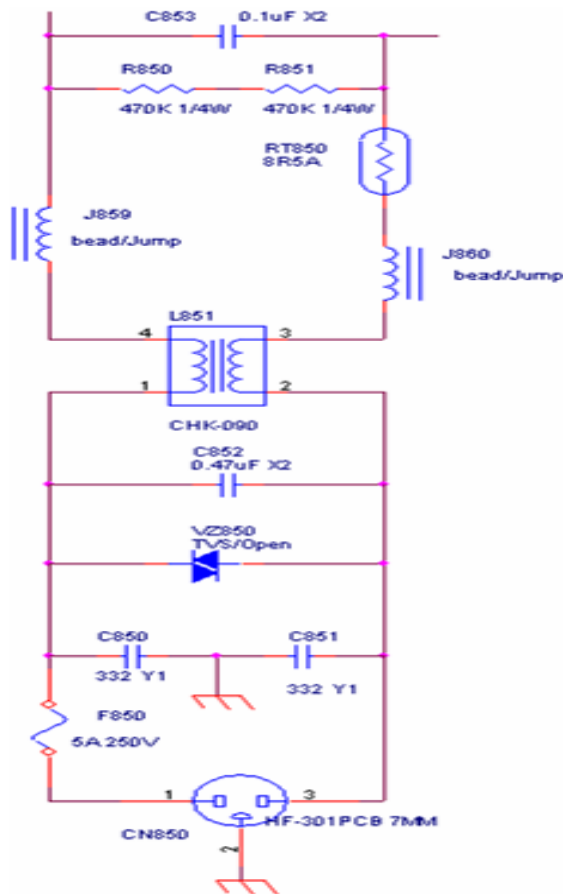
## 2.2 Power PWM circuit

### 2.2.1) Block diagram :( fig.4)



**Fig.4**

### 2.2.2) AC Input and EMI Filter :( fig.5)



**fig.5**

CN850 is a connector for connecting AC Power. F850 is a fuse to protect all the circuit AC. Input voltage is from 90V to 264V. R850 and R851 are joined between two inputting main circuit to prevent man from shock. L851 is used to clear up low frequency wave. C850 and C851 are used to discharge the waves that L851 produced. High frequency waves are damped by C852 and C853.

### 2.2.3) High Voltage to Low Voltage Control Circuit :( fig.6)

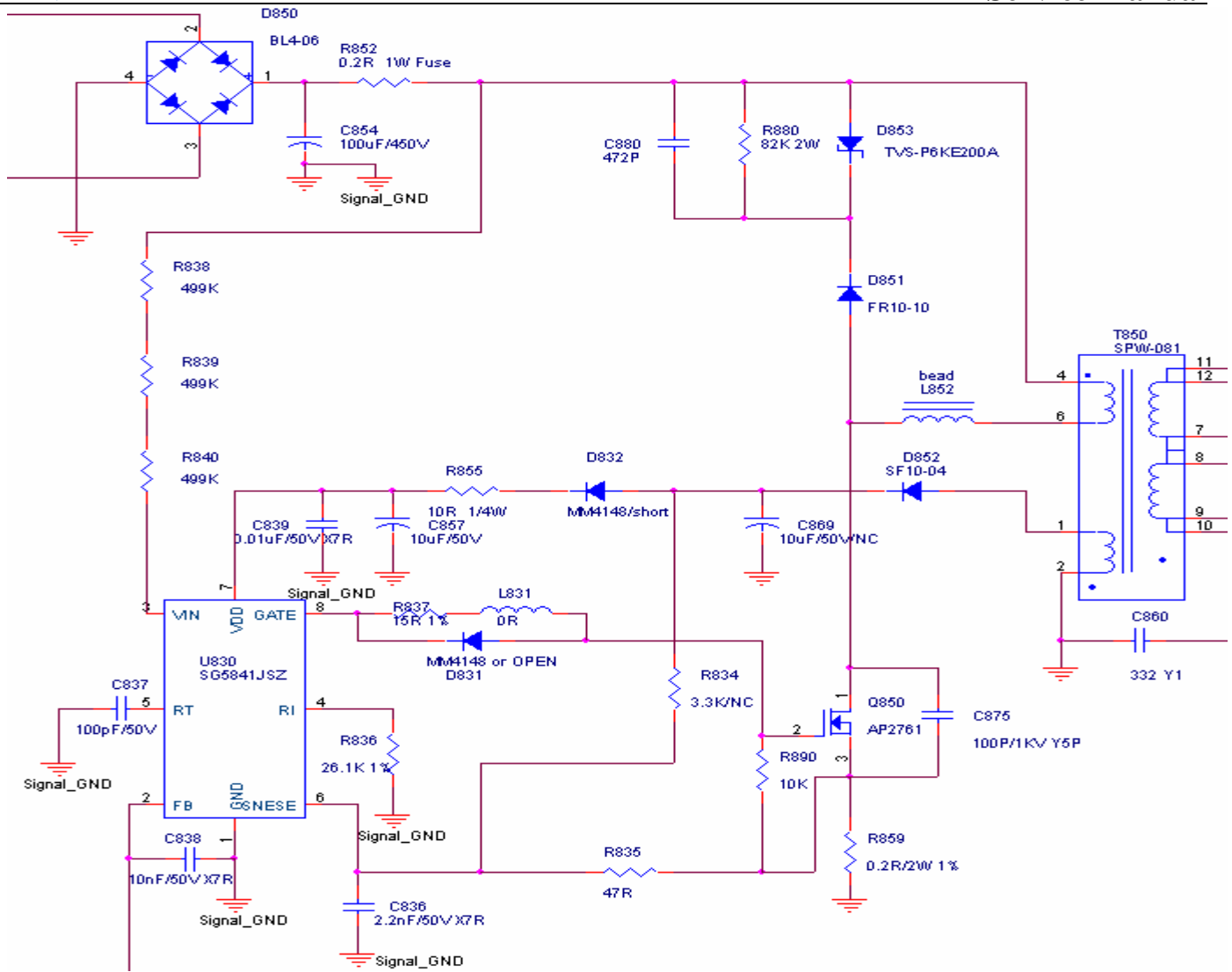


fig.6

D850 is a rectifier in which there are 4 build-in diodes, inverting AC to DC.

C854 is used to smooth the wave from rectifier. R852 is a fuse resistor to protect the following circuit when inrush current is too large. U850 is a highly integrated PWM controller. Typical start-up current for U830 is only 8uA; R838, R839 and R840 are serial circuit to limit current flow. When current flow through R838, R839 and R840 gets to Pin 3 of U830, with VDD hold-up capacitor C857, U830 is enough for starting up.

When U830 begins to work, Pin8 (GATE) of U830 will output square wave to drive Q850, and then the main current flow get to GND by passing through T850, Q850. Because of the change of current flow, wires in the other side of T850 will induct current. At the same time, the current induced by wires which connected T850 Pin 1 and Pin 2, with components of D852, R855, C857 and C839, will be supplied to U830 for normal operating.

When the sense voltage across the sense resistor R859, reaches the threshold voltage around 0.85V, the output GATE drive will be turned off. Every time when the output of power supply is shorted or over loaded, the FB voltage will increase, the build-in PWM output will then be turned off. Both will prevent the power supply from being overheated under over loading condition. The PWM duty cycle is determined by this current sense signal and VFB, the feedback voltage. When the voltage on sense pin reaches  $V_{comp} = (V_{FB} - 1.0)/3$ , a switch cycle will be terminated immediately.  $V_{comp}$  is internally clamped to a variable voltage around 0.85 V for output power limit.

When Q850 are turned off, the main current flow will be consumed through D851, C880, R880 and D853. This will prevent Q850 from being damaged under large current impulse and voltage spike.

#### 2.2.4) DC 16V and 5V Output Circuit and Feedback circuit :( fig.7)

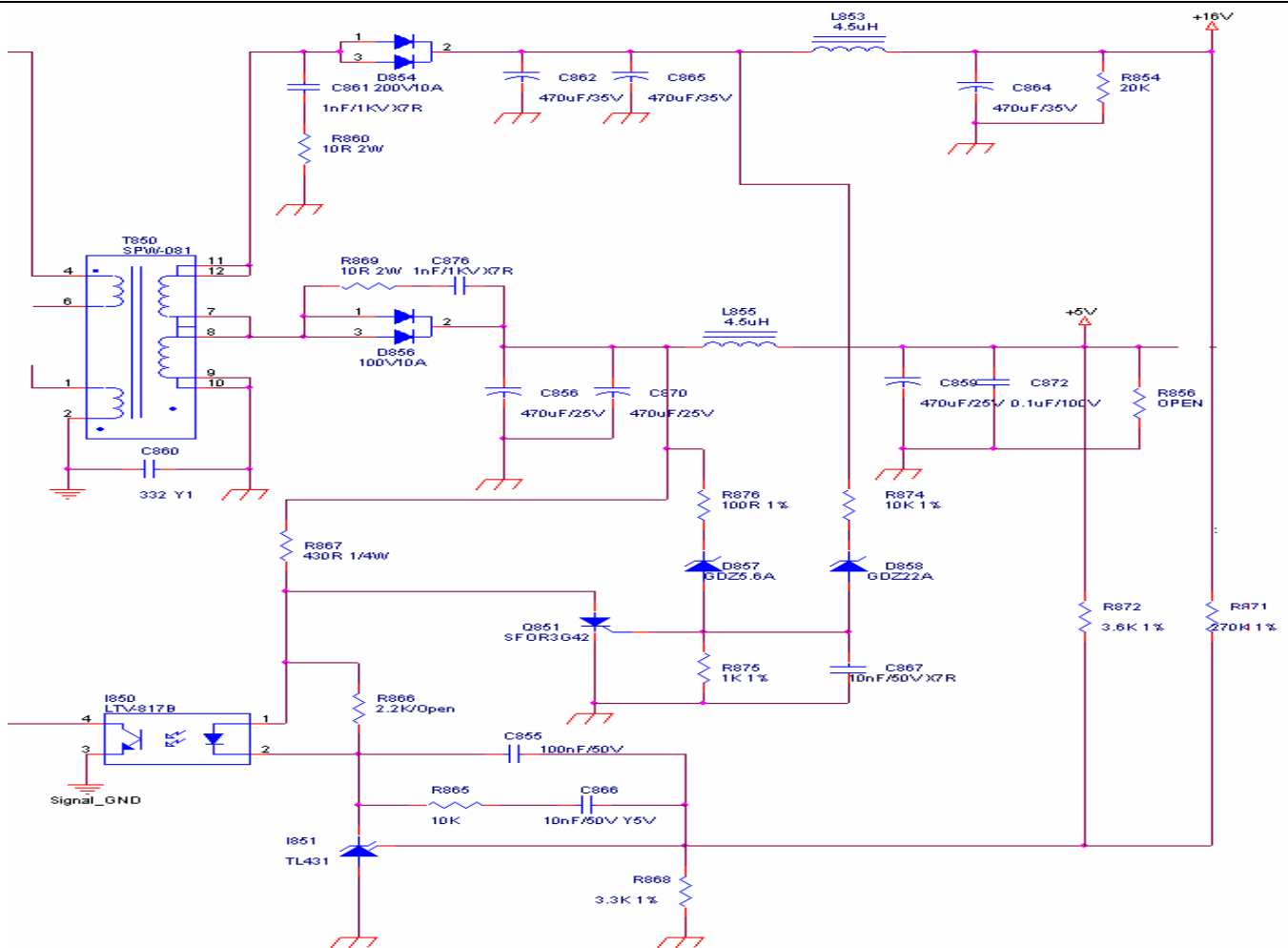


fig.7

D854 is used to rectify the inducted current. R860 and C861 are used to store energy when current is reversed. The parts including C862, C865, C864 and L853 are used to smooth the current waves that are from D854, and then 16V voltage is supplied.

D856 is used to rectify the inducted current. R869 and C876 are used to store energy when current is reversed. The parts including C856, C870, C859, C872 and L855 are used to smooth the current waves that are from D856, and then 5V voltage is supplied.

16V and 5V supply voltage feed back to PWM controller U830 via R871, R872, R868 and I850, I851. R865, C866 and C855 used to control respond time.

When 16V output or 5V output come out of SPEC, D857, D858 and Q851 will be operated, via I850, U850 will be in Auto Restart mode until the matter is got rid of.

## 2.3 I/F Board Circuit (see the Attachment 2- Schematic)

### 2.3.1 RGB CAPTURE

- Signal RED, GREEN, BLUE input through CN101 #1, #2, #3, Stop DC via C101, C102 and C103, and then enter into U104 (TSUM56BWHK-LF) analog input PIN #59, #56, #54, and then TSUM56BWHK-LF deals with signal internally. D101, D102, D103 are ESD protector to prevent U104 from ESD.
- Signal DDC\_SCL (series clock) inputs via CN101#15, and then passes through ZD104 for ESD protection, goes into EDID EEPROM IC U102 #6.
- Signal DDC\_SDA (series data) inputs via CN101#12, and then passes through ZD105 for ESD protection, goes into EDID EEPROM IC U102 #5.
- Signal TTL vertical sync. (Vsync) inputs via CN101 #14, and then clamped by ZD103 Zener, passes through R116, and then goes into IC U104 (TSUM56BWHK-LF) #64.
- Signal TTL horizontal sync. (Hsync) inputs via CN101 #13, and then clamped by ZD102 Zener, passes through FB104 & R115, and then goes into IC U104 (TSUM56BWHK-LF) #63.
- CN101#5 is defined as cable detect pin, this detector realize via R113 and U104#26, and

ZD109 is ESD protector.

- U102 +3.3V is supplied by PC via CN101#9 with D104 and ZD101 for ESD protection, or supplied by Monitor self via D104.
- U102 is an EEPROM IC which is memory and EDID data saved in it.

### 2.3.2 DVI CAPTURE

- Differential Signal input RX0+,RX0-,RX1+,RX1-,RX2+,RX2-,RXC+,RXC- through CN102 #18,#17,#10,#9,#2,#1,#23,#24 via R130,R131,R132,R133,R134,R135,R137,R138 enter into U104 (TSUM56BWHK-LF) Digital input terminal #39,#40,#42,#43,#45,#46,#48,#49, and then TSUM56BWHK-LF deals with signal internally. D108, D109, D110, D111, D112, D113, D114, D115 are ESD protector to prevent U104 from ESD
- Signal DDC\_SCL (series clock) inputs via CN102#6, and then passes through ZD106 Zener for ESD protection, via R126, goes into EDID EEPROM IC U101 #6.
- Signal DDC\_SDA (series data) inputs via CN102#7, and then passes through ZD107 Zener for ESD protection, via R127, goes into EDID EEPROM IC U101 #5.
- CN102#15 is defined as cable detect pin, this detector realize passes through R125 ,go into U104#27, and ZD110 is ESD protector.
- U101 +5V is supplied by PC via CN102#14 through D107, or supplied by Monitor self via D107.
- U101 is an EEPROM IC which is memory and DVI input EDID data saved in it.

### 2.3.3 Buttons Control

- Button "Power" on front bezel connects to U104 (TSUM56BWHK-LF) #23 through CN104 #1, U104 #23 is defined as power on/off.
- Button "↑" on front bezel connects to U104 (TSUM56BWHK-LF) #24 through CN104 #2, U104#24 Voltage is defined as "Plus".
- Button "↓" on front bezel connects to U104 (TSUM56BWHK-LF) #24 through CN104 #2, U104 #24 Voltage is defined as "Minus".
- Button "Menu" on front bezel connects to U104 (TSUM56BWHK-LF) #25 through CN104 #4, U104 #25 Voltage is defined as "Menu".
- Button "ENTER" on front bezel connects to U104 (TSUM56BWHK-LF) #25 through CN104 #4, U104 #25 Voltage is defined as "ENTER".
- LED Indicator on Front Bezel
  - a. When press button "power", U104 (TSUM56BWHK-LF) #31 be send in low Voltage, make Q109#3 sends out high Voltage , and then to CN01#2 on keypad, LED white on.
  - b. When in "Suspend" mode, U104 (TSUM56BWHK-LF) #35 sends out a low Voltage, make Q108#3 sends out high Voltage and then to CN01 #3 on keypad, LED Amber ON.

### 2.3.4 MATAR CHIP U104 (TSUM56BWHK-LF)

- U104 (TSUM56BWHK-LF ) #105~#114 output 8 bit even and #118~#127 output 8 bit odd LVDS digital data to panel control circuit through CN106.
- U104 (TSUM56BWHK-LF ) #75 output PPWR "H" potential to make Q106 conducted, and then make Q103 conducted, +5V flow to CN106#1~#3 as Panel Vdd .
- U104 (TSUM56BWHK-LF) #20 output CCFL\_ON/OFF "L" potential to control Inverter on/off.
- U104 (TSUM56BWHK-LF) #21 outputs Brightness "PWM" signals to control CCFL brightness.
- TCLK by Crystal 14.318MHz input to U104 (TSUM56BWHK-LF) #32.
- U104 (TSUM56BWHK-LF) #19 is RESET signals input pin

Please refer to TSUM56BWHK-LF Pin Assignments table in page

### 2.3.5 Regulator Circuit

- +5V is from switching mode power supply for panel
- +3.3V is generated from Regulator U103 which is supplied by+5V through C168 filtering, C130 is 3.3V output filter ,the output 3.3V supplies toU104, U108,U107,U106,U105,U102, U101.

- +1.8V is generated from Regulator U108 which is supplied by U103-3.3V through C143 filtering. The 1.8V via FB105 supplies to U104.

### 3. FACTORY PRESET TIMING TABLE

| Standard | Resolution | Horizontal Frequency (KHz) | Vertical Frequency (Hz) |
|----------|------------|----------------------------|-------------------------|
| VESA     | 640 x 480  | 31.469                     | 59.940                  |
|          | 640 x 480  | 37.500                     | 75.000                  |
|          | 800 x 600  | 37.879                     | 60.317                  |
|          | 800 x 600  | 46.875                     | 75.000                  |
|          | 1024 x 768 | 48.363                     | 60.004                  |
|          | 1024 x 768 | 60.023                     | 75.029                  |
|          | 1152x864   | 67.500                     | 75.000                  |
|          | 1280x1024  | 48.483                     | 60.042                  |
|          | 1280x1024  | 60.087                     | 75.034                  |
|          | 1440x900   | 55.935                     | 59.887                  |
| IBM DOS  | 720 x 400  | 31.469                     | 70.087                  |

### 4. Power On/Off Sequency

Hardware power On/Off

When power cord plug into AC socket, Power provides 16V and DC\_5V.

DC\_5V is main voltage for panel and Regulator U103.

DC\_3.3V is coming from Regulator U103, DC\_3.3v is main voltage for U104. When DC\_3.3V input to U104 and U104 reset circuit active, U104 all registers will be set to default, that means finish hardware power on.

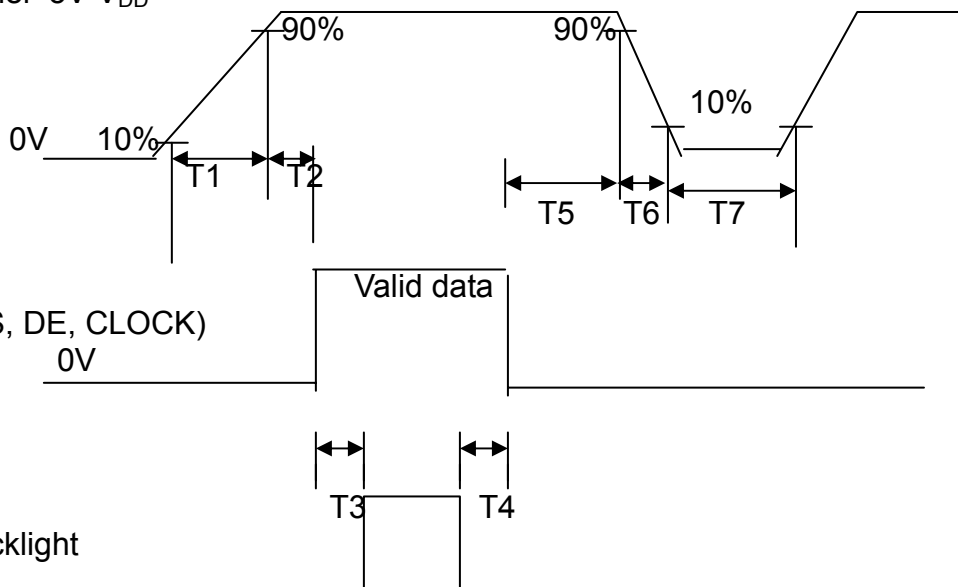
When pull out power cord from AC socket, the system shut down instantly for no supply

Software power On/Off

- When press power key, U104 #23 receives low pulse, then (TSUM56BWHK-LF) U104 will be wake up and send control signals (at 20,75pin) to on CCFL and switch 5.0v to panel module, at the same time, U104 make the VGA/DVI cable input signal source display normal on panel if the VGA/DVI cable input signal is active
- If power ON, U104 #31 (LED\_green) will send out low potential, and then LED white on.
- If power saveing, U104 #35 (LED\_Amber) will send out low potential, and then LED Amber on.
- If power ON or power saveing, when press power key, U104 #23 receives low pulse, then U104 will be sleeping and turn off backlight, at the same time, the panel will lose +5V.

The Panel\_Vcc, Backlight\_En, CLK/DATA output to panel will follow the following sequency.

Power supply for panel+5V  $V_{DD}$

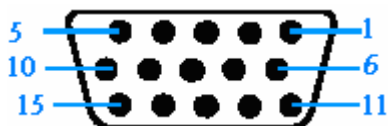


Signals  
(Digital RGB, HS, VS, DE, CLOCK)

Power supply for backlight

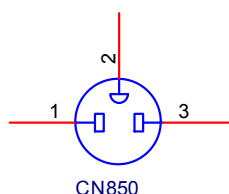
|                | T1 (ms) | T2 (ms) | T3 (ms) | T4 (ms) | T5 (ms) | T6 (ms) | T7(ms) |
|----------------|---------|---------|---------|---------|---------|---------|--------|
| SPEC (Samsung) | 0.3~10  | 0.0~50  | >500    | >200    | 0.0~50  | NA      | >1000  |
| SPEC (LPL)     | 0.5~10  | 0.01~50 | >500    | >200    | 0.01~50 | NA      | >1000  |

## 5. D-SUB Connector Pin Assignment



| Pin | Symbol       | Pin | Symbol    | Pin | Symbol  |
|-----|--------------|-----|-----------|-----|---------|
| 1   | Red          | 6   | Red_GND   | 11  | GND     |
| 2   | Green        | 7   | Green_GND | 12  | DDC_SDA |
| 3   | Blue         | 8   | Blue_GND  | 13  | Hsync   |
| 4   | GND          | 9   | PC+5V     | 14  | Vsync   |
| 5   | Cable Detect | 10  | GND       | 15  | DDC_SCL |

## 6. AC input connector Pin Assignment



| Pin | Symbol  | Description                                 |
|-----|---------|---------------------------------------------|
| 1   | Line    | AC Line( $V_{in}$ =100 to 240 Vrms,50/60Hz) |
| 2   | GND     | GND                                         |
| 3   | Neutral | AC Line( $V_{in}$ =100 to 240 Vrms,50/60Hz) |

## 7. Inner Connector Pin Assignment

### 7.1 CN106 (Connect M/B to Panel,)

| Pin | Symbol    | Description                    |
|-----|-----------|--------------------------------|
| 1   | Panel_Vcc | Panel power supply (typ.5.0V)  |
| 2   | Panel_Vcc | Panel power supply (typ. 5.0V) |
| 3   | Panel_Vcc | Panel power supply (typ. 5.0V) |
| 4   | NC        |                                |

|    |          |                                       |
|----|----------|---------------------------------------|
| 5  | NC       |                                       |
| 6  | NC       |                                       |
| 7  | GND_LVDS | LVDS Ground                           |
| 8  | RXE3+    | LVDS signal of even channel 3(-)      |
| 9  | RXE3-    | LVDS signal of even channel 3(+)      |
| 10 | RXEC+    | LVDS signal of even channel clock (+) |
| 11 | RXEC-    | LVDS signal of even channel clock (-) |
| 12 | RXE2+    | LVDS signal of even channel 2(+)      |
| 13 | RXE2-    | LVDS signal of even channel 2(-)      |
| 14 | GND_LVDS | LVDS Ground                           |
| 15 | RXE1+    | LVDS signal of even channel 1(+)      |
| 16 | RXE1-    | LVDS signal of even channel 1(-)      |
| 17 | GND_LVDS | LVDS Ground                           |
| 18 | RXE0+    | LVDS signal of odd channel 0(+)       |
| 19 | RXE0-    | LVDS signal of odd channel 0(-)       |
| 20 | RXO3+    | LVDS signal of odd channel 3(+)       |
| 21 | RXO3-    | LVDS signal of odd channel 3(-)       |
| 22 | RXOC+    | LVDS signal of even channel clock (+) |
| 23 | RXOC-    | LVDS signal of even channel clock (-) |
| 24 | GND_LVDS | LVDS Ground                           |
| 25 | RXO2+    | LVDS signal of even channel 2(+)      |
| 26 | RXO2-    | LVDS signal of even channel 2(-)      |
| 27 | RXO1+    | LVDS signal of even channel 1(+)      |
| 28 | RXO1-    | LVDS signal of even channel 1(-)      |
| 29 | RXO0+    | LVDS signal of odd channel 0(+)       |
| 30 | RXO0-    | LVDS signal of odd channel 0(-)       |

## 7.2 CN1, CN2, CN3, CN4 (Connect to Panel Backlight,)

| Pin | Symbol | Description           |
|-----|--------|-----------------------|
| 1   | HV     | High voltage for lamp |
| 2   | LV     | Low voltage for lamp  |

## 7.3 CN104 (Connect to keypad, WAFER2\*4P or compatible connector)

| Pin | Symbol     | Description                                                |
|-----|------------|------------------------------------------------------------|
| 1   | POWER      | OSD "POWER" control                                        |
| 2   | PLUS/MINUS | OSD "+/-" control and "AUTO/Brightness" adjustable hot key |
| 3   | LED white  | LED white on/off control                                   |
| 4   | MENU/ENTER | OSD "MENU/ENTER" control                                   |
| 5   | LED Amber  | LED amber on/off control                                   |
| 6   | GND        | Ground                                                     |
| 7   | GND        | Ground                                                     |
| 8   | GND        | Ground                                                     |



## 8. Key Parts Pin Assignments

### 8.1 U104(TSUM56BWHK-LF-2)

#### Analog Interface

| Pin Name | Pin Type                             | Function                                | Pin |
|----------|--------------------------------------|-----------------------------------------|-----|
| HSYNC0   | Schmitt Trigger Input w/ 5V-tolerant | Analog HSYNC input                      | 63  |
| VSINC0   | Schmitt Trigger Input w/ 5V-tolerant | Analog VSYNC input                      | 64  |
| REFP     |                                      | Internal ADC top de-coupling pin        | 62  |
| REFM     |                                      | Internal ADC bottom de-coupling pin     | 61  |
| RIN0P    | Analog Input                         | Analog red input                        | 59  |
| RIN0M    | Analog Input                         | Reference ground for analog red input   | 58  |
| SOGIN0   | Analog Input                         | Sync-on-green input                     | 57  |
| GIN0P    | Analog Input                         | Analog green input                      | 56  |
| GIN0M    | Analog Input                         | Reference ground for analog green input | 55  |
| BIN0P    | Analog Input                         | Analog blue input                       | 54  |
| BIN0M    | Analog Input                         | Reference ground for analog blue input  | 53  |
| REXT     |                                      | External resistor 390 ohm to AVDD_33    | 51  |

#### DVI Interface

| Pin Name | Pin Type | Function                  | Pin |
|----------|----------|---------------------------|-----|
| R+       | Input    | DVI Input Channel + RED   | 39  |
| R-       | Input    | DVI Input Channel – RED   | 40  |
| G+       | Input    | DVI Input Channel + GREEN | 42  |
| G-       | Input    | DVI Input Channel – GREEN | 43  |
| B+       | Input    | DVI Input Channel + BLUE  | 45  |
| B-       | Input    | DVI Input Channel – BLUE  | 46  |
| CK+      | Input    | DVI Input Clock Pair +    | 48  |
| CK-      | Input    | DVI Input Clock Pair –    | 49  |

#### Serial Flash Interface

| Pin Name | Pin Type             | Function                     | Pin |
|----------|----------------------|------------------------------|-----|
| SDO      | Input w/ 5V-Tolerant | SPI Flash Serial Data Output | 70  |
| CSZ      | Output               | SPI Flash Chip Select        | 71  |
| SCK      | Output               | SPI Flash Serial Clock       | 72  |
| SDI      | Output               | SPI Flash Serial Data Input  | 73  |



## LVDS Interface

| Pin Name | Pin Type | Function                                   | Pin |
|----------|----------|--------------------------------------------|-----|
| LVA0M    | Output   | LVDS A-Link Channel 0 Negative Data Output | 114 |
| LVA0P    | Output   | LVDS A-Link Channel 0 Positive Data Output | 113 |
| LVA1M    | Output   | LVDS A-Link Channel 1 Negative Data Output | 112 |
| LVA1P    | Output   | LVDS A-Link Channel 1 Positive Data Output | 111 |
| LVA2M    | Output   | LVDS A-Link Channel 2 Negative Data Output | 110 |
| LVA2P    | Output   | LVDS A-Link Channel 2 Positive Data Output | 109 |
| LVA3M    | Output   | LVDS A-Link Channel 3 Negative Data Output | 106 |
| LVA3P    | Output   | LVDS A-Link Channel 3 Positive Data Output | 105 |
| LVACKM   | Output   | LVDS A-Link Negative Clock Output          | 108 |
| LVACKP   | Output   | LVDS A-Link Positive Clock Output          | 107 |
| LVB0M    | Output   | LVDS B-Link Channel 0 Negative Data Output | 127 |
| LVB0P    | Output   | LVDS B-Link Channel 0 Positive Data Output | 126 |
| LVB1M    | Output   | LVDS B-Link Channel 1 Negative Data Output | 125 |
| LVB1P    | Output   | LVDS B-Link Channel 1 Positive Data Output | 124 |
| LVB2M    | Output   | LVDS B-Link Channel 2 Negative Data Output | 123 |
| LVB2P    | Output   | LVDS B-Link Channel 2 Positive Data Output | 122 |
| LVB3M    | Output   | LVDS B-Link Channel 3 Negative Data Output | 119 |
| LVB3P    | Output   | LVDS B-Link Channel 3 Positive Data Output | 118 |
| LVBCKM   | Output   | LVDS B-Link Negative Clock Output          | 121 |
| LVBCKP   | Output   | LVDS B-Link Positive Clock Output          | 120 |

## GPIO Interface

| Pin Name          | Pin Type           | Function                                                                                                   | Pin |
|-------------------|--------------------|------------------------------------------------------------------------------------------------------------|-----|
| GPIO_P25          | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA programmable driving strength                                            | 20  |
| GPIO_P27/<br>PWM5 | I/O w/ 5V-tolerant | Pulse Width Modulation Output; 4mA driving strength/<br>General Purpose Input/Output; 4mA driving strength | 21  |
| GPIO_P00/<br>SAR0 | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength/<br>SAR ADC Input                                       | 22  |
| GPIO_P01/<br>SAR1 | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength/<br>SAR ADC Input                                       | 23  |
| GPIO_P02/<br>SAR2 | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength/<br>SAR ADC Input                                       | 24  |
| GPIO_P03/<br>SAR3 | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength/<br>SAR ADC Input                                       | 25  |

| Pin Name             | Pin Type           | Function                                                                                                   | Pin |
|----------------------|--------------------|------------------------------------------------------------------------------------------------------------|-----|
| GPIO_P17             | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA programmable driving strength                                            | 26  |
| GPIO_P07             | I/O w/ 5V-tolerant | General Purpose Input/Output; 6/12mA programmable driving strength                                         | 27  |
| GPIO_P15             | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA programmable driving strength                                            | 28  |
| GPIO_P16/<br>PWM1    | I/O w/ 5V-tolerant | Pulse Width Modulation Output; 4mA driving strength/<br>General Purpose Input/Output; 4mA driving strength | 29  |
| GPIO_P12             | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength                                                         | 30  |
| GPIO_P13             | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength                                                         | 31  |
| GPIO_P14/<br>PWM0    | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength/<br>Pulse Width Modulation Output; 4mA driving strength | 35  |
| GPIO_P22/<br>PWM0    | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength/<br>Pulse Width Modulation Output; 4mA driving strength | 69  |
| GPIO_P47             | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength                                                         | 74  |
| GPIO_P46             | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength                                                         | 75  |
| GPIO_P11/<br>I2C_MDA | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength/<br>I2C Master Data; 4mA driving strength               | 76  |
| GPIO_P10/<br>I2C_MCL | I/O w/ 5V-Tolerant | General Purpose Input/Output; 4mA driving strength/<br>I2C Master Clock; 4mA driving strength              | 77  |
| GPIO_P24/<br>PWM2    | I/O w/ 5V-tolerant | Pulse Width Modulation Output; 4mA driving strength/<br>General Purpose Input/Output; 4mA driving strength | 78  |
| GPIO_P45<br>/PWM1    | I/O w/ 5V-tolerant | General Purpose Input/Output; 4mA driving strength/<br>Pulse Width Modulation Output; 4mA driving strength | 79  |

#### Misc. Interface

| Pin Name              | Pin Type             | Function                                                                                                 | Pin         |
|-----------------------|----------------------|----------------------------------------------------------------------------------------------------------|-------------|
| BYPASS                |                      | For External Bypass Capacitor                                                                            | 4           |
| RST                   | Input w/ 5V-Tolerant | Chip Reset; High Reset                                                                                   | 19          |
| VCTRL                 | Output               | Regulator Control                                                                                        | 11          |
| MODE[1:0]             | Input                | Chip Configuration Input                                                                                 | 102,<br>104 |
|                       |                      | MODE[1:0]                                                                                                |             |
|                       |                      | 00                                                                                                       |             |
| DDCA_SDA/<br>RS232_TX | I/O w/ 5V-tolerant   | DDC Data for Analog Interface / UART Transmitter /<br>General Purpose Input/Output; 4mA driving strength | 65          |
| DDCA_SCL/<br>RS232_RX | Input w/ 5V-tolerant | DDC Clock for Analog Interface/ UART Receiver /<br>General Purpose Input/Output; 4mA driving strength    | 66          |

| Pin Name | Pin Type                  | Function                                                                           | Pin |
|----------|---------------------------|------------------------------------------------------------------------------------|-----|
| DDCD_SDA | I/O w/ 5V-tolerant        | DDC Data and HDCP Slave Serial Port Data for DVI interface; 4mA driving strength   | 36  |
| DDCD_SCL | Input w/ 5V-tolerant      | DDC Clock and HDCP Slave Serial Port Clock for DVI interface; 4mA driving strength | 37  |
| XIN      | Crystal Oscillator Input  | Xin                                                                                | 32  |
| XOUT     | Crystal Oscillator Output | Xout                                                                               | 33  |

#### Power Pins

| Pin Name | Pin Type   | Function             | Pin                     |
|----------|------------|----------------------|-------------------------|
| AVDD_33  | 3.3V Power | Analog Power         | 34, 44, 50, 52, 60      |
| VDDP     | 3.3V Power | Digital Output Power | 14, 67, 95, 103, 115    |
| VDDC     | 1.8V Power | Digital Core Power   | 12, 68, 97, 117         |
| GND      | Ground     | Ground               | 13, 38, 41, 47, 96, 116 |

#### No Connects

| Pin Name | Pin Type | Function    | Pin                                  |
|----------|----------|-------------|--------------------------------------|
| NC       |          | No connects | 1-3, 5-10, 15-18, 80-94, 98-101, 128 |

### 8.2U105 (Serial Flash)

| Pin | Symbol | I/O | Description                                                                                                                                                                                               |
|-----|--------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | CE#    | I   | The device is enabled by a high to low transition on CE#. CE# must remain low for the duration of any command sequence.                                                                                   |
| 2   | SO     | I/O | To transfer commands, addresses, or data serially into the device.                                                                                                                                        |
| 3   | WP#    | I/O | The write protect (WP#) pin is used to enable/disable BPL bit in the status register.                                                                                                                     |
| 4   | VSS    | G   | Connect ground                                                                                                                                                                                            |
| 5   | SI     | I/O | To transfer commands, addresses, or data serially into the device input are latched on the rising edge of the serial clock.                                                                               |
| 6   | SCK    | I/O | To provide the timing of serial interface. Commands, addresses, or input data are latched on the rising edge of the clock input, while output data is shifted out on the Falling edge of the clock input. |
| 7   | HOLD   | I/O | To temporarily stop serial communication with SPI flash memory without resetting the device.                                                                                                              |
| 8   | VDD    | P   | To provide power supply.                                                                                                                                                                                  |

### 8.3 U830 (SG5841, PWM Power Controller)

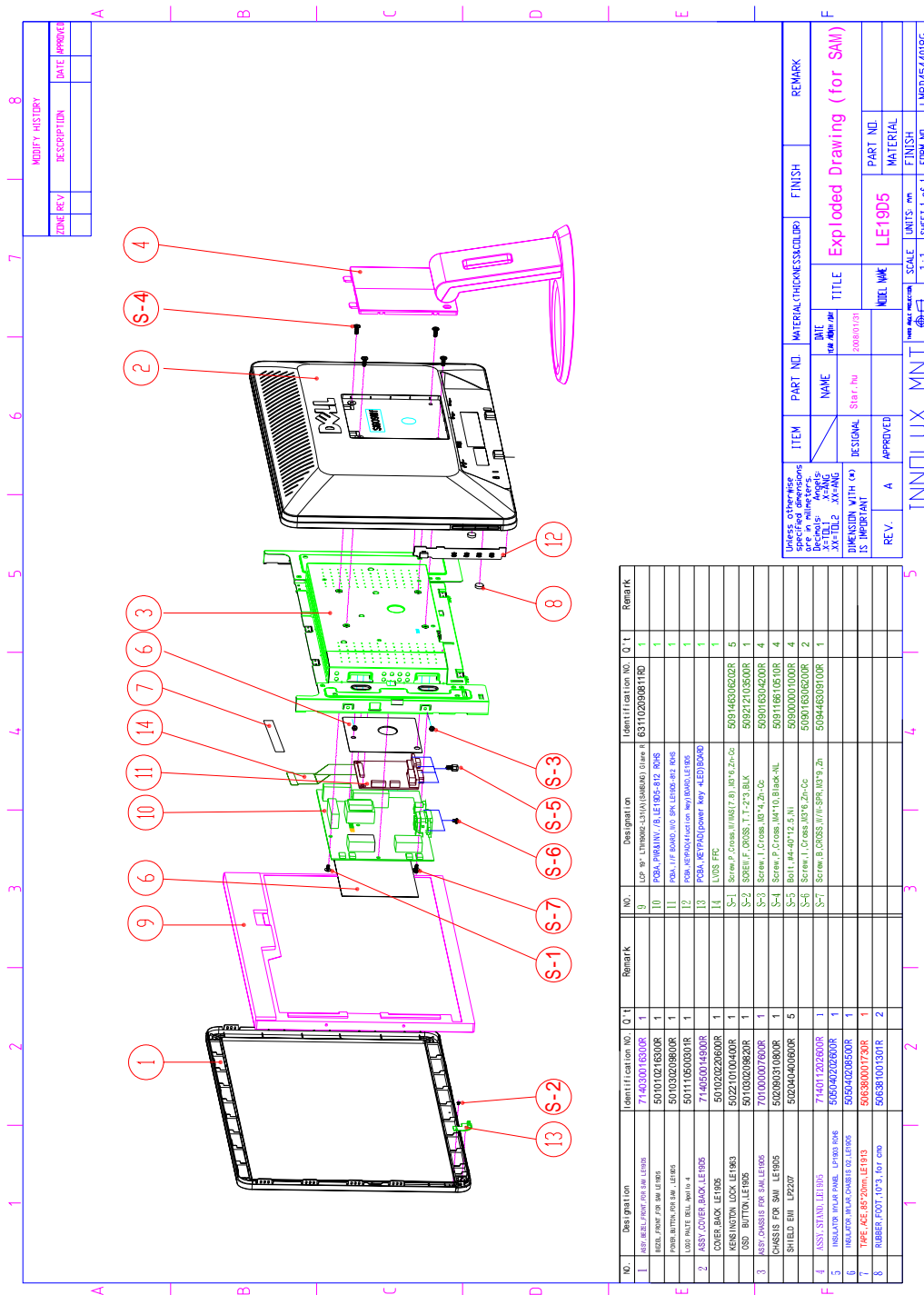
| Pin | Symbol | I/O | Description                                                                                             |
|-----|--------|-----|---------------------------------------------------------------------------------------------------------|
| 1   | GND    |     | Ground                                                                                                  |
| 2   | FB     | I   | Feedback, the FB pin provides the information of the regulation. The PWM duty cycle is controlled by FB |
| 3   | VIN    | I   | Start-up current input                                                                                  |
| 4   | RI     | I   | Reference setting, typical voltage 1.3V                                                                 |
| 5   | RT     |     | N.C.(not connected)                                                                                     |
| 6   | SENSE  | I   | Current sense for over current protection                                                               |
| 7   | VDD    | I   | Power supply                                                                                            |
| 8   | GATE   | O   | PWM output                                                                                              |

### 8.4 U1 (OZ9937, CCFL Inverter controller IC)

| Pin | Symbol | I/O | Description                                                            |
|-----|--------|-----|------------------------------------------------------------------------|
| 1   | DRV1   | O   | Drive output1                                                          |
| 2   | VDDA   | I   | Supply voltage input                                                   |
| 3   | DIM    | I   | Internal LPWM dimming or external PWM pulse input for dimming function |
| 4   | ISEN   | I   | Current sense feedback                                                 |
| 5   | PID    | I   | Analog dim input                                                       |
| 6   | RSTR   | I   | Resistor to set striking frequency                                     |
| 7   | RT     | I   | Resistor to set operating frequency compensation range                 |
| 8   | ENA    | I   | ON/OFF control of IC                                                   |
| 9   | VSEN   | I   | Voltage sense                                                          |
| 10  | OVPT   | I   | Over-voltage/over-current protecting threshold setting                 |
| 11  | LCT    | I   | Timing capacitor to set internal PWM dimming frequency                 |
| 12  | SSTCMP | I   | Capacitor for soft start time and loop compensation                    |
| 13  | CT     | I   | Timing resistor and capacitor for operation and striking frequency     |
| 14  | TIMER  | I   | Timing capacitor to set striking time and shutdown delay time          |
| 15  | GNDA   | I   | Ground                                                                 |
| 16  | DRV2   | O   | Drive output2                                                          |

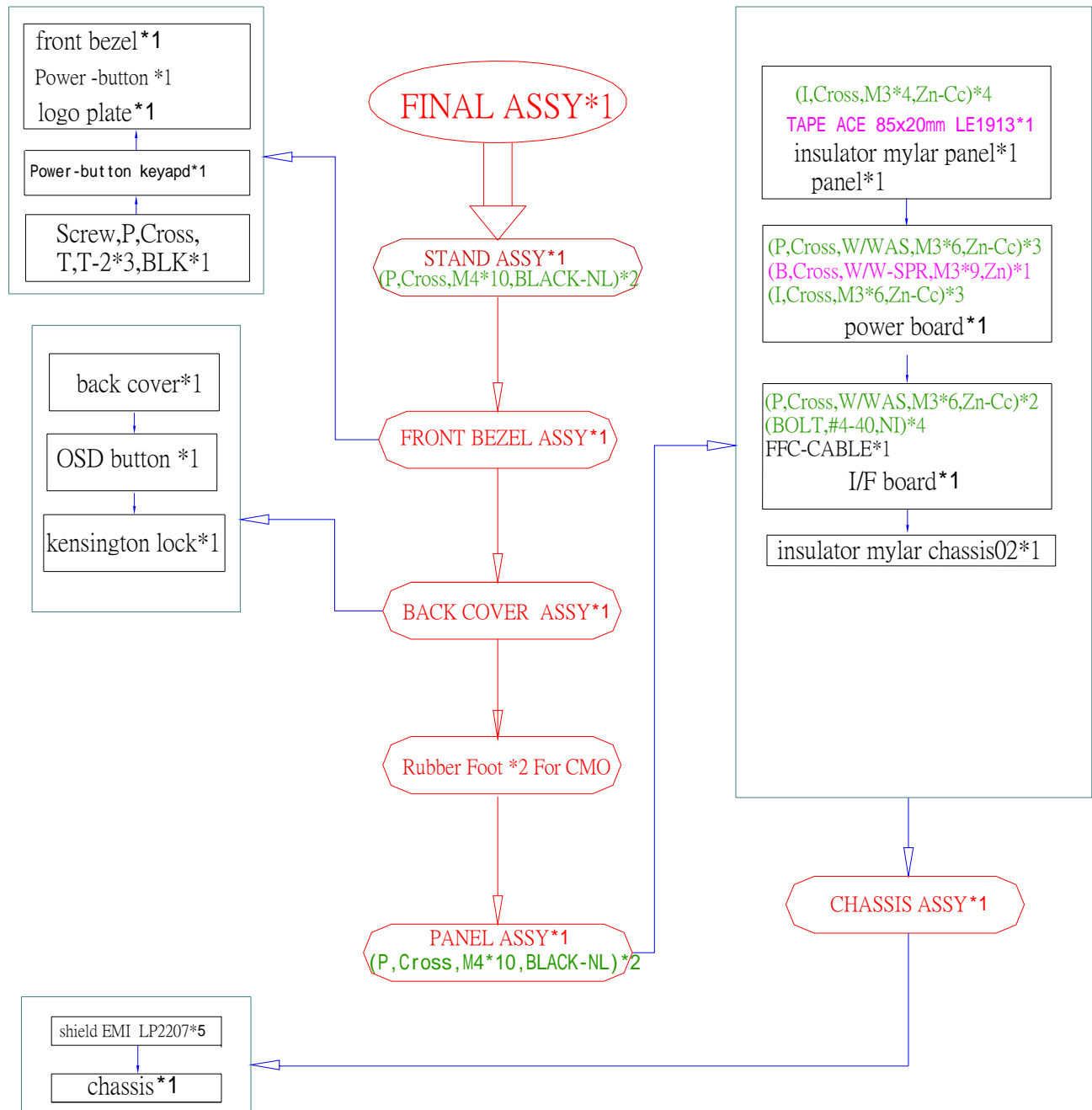
# Chapter 4- Disassembly & Assembly

## 1. Exploded Diagram



## 2. S1909WX Disassembly Block

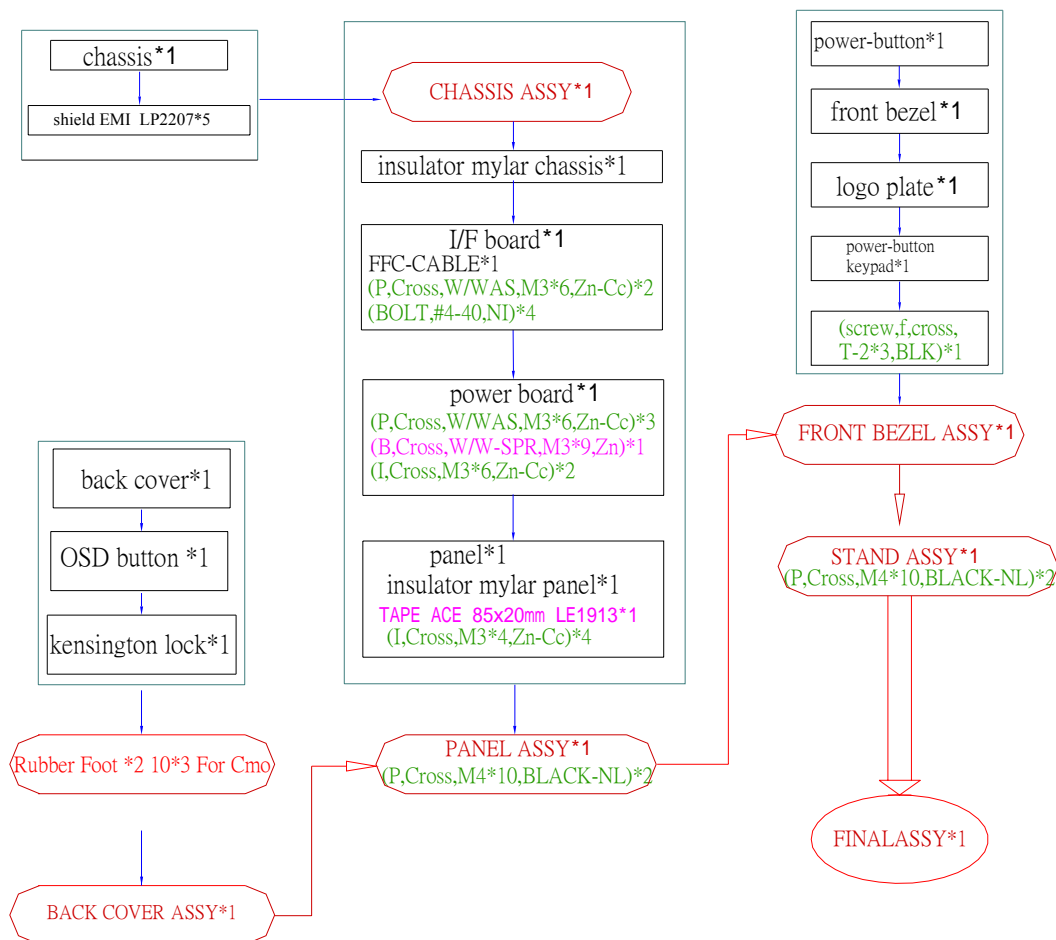
### LE19D5 DISASSEMBLY BLOCK



- Note:**
1. The arrows point out the direction of disassembly.
  2. The foil which stuck on the panel need re-sticked on original position after sample repaired.

### 3. S1909WX Assembly Block

#### LE19D5 ASSEMBLY BLOCK



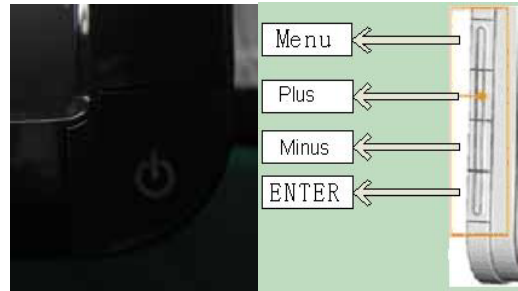
Note: 1. The arrows point out the direction of assembly  
 2. After repair, the foil need re-sticked on original position on the panel.



## Chapter 5- TEST AND ADJUSTMENT

### 1. Function key Definitions

POWER



Every bottom function defining

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Switch with power LED indicator | Power: On/Off, includes power indicator and Power ICON<br>white- Active On<br>Amber- DPMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Panel Controls                        | <ol style="list-style-type: none"> <li>1. Menu: When OSD isn't shown on screen, press [MENU] to enter OSD interface ,When OSD displays, press [MENU] to exit OSD</li> <li>2. ( ↑ ): When "MENU OSD" displays, press these keys to change the contents of an adjustment item, or change an adjustment value<br/>When "MENU OSD" un-displays, press [(] to adjust Brightness and Contrast;</li> <li>3. ( ↓ ):When "MENU OSD" displays, press these keys to change the contents of an adjustment item, or change an adjustment value<br/>When "MENU OSD" un-displays, press [(]to execute the Auto Adjust function</li> <li>4. Enter: When "MENU OSD" displays, press these keys Enter the OSD sub menu<br/>When "MENU OSD" displays, press these keys to select the input source</li> <li>5. Power: Power on or off the monitor</li> </ol>                                                                   |
| Factory Modes Keys Function           | <p>Auto Color Balance<br/>Purpose: Automatically calibrate chip ADC parameter by using chip internal DAC.<br/>Process: If we want to do "Auto Color Balance" again, please confirm the following steps.</p> <ol style="list-style-type: none"> <li>1) Connect the VGA cable with the standard video pattern generator and display the pattern with blackest and whitest colors.</li> <li>2) Press "Power Key", to power off the monitor.</li> <li>3) Press "Menu Key" and "Up Key" simultaneously, and then press "Power Key" to power on the monitor.</li> <li>4) Press "↑", then entry "Factory" mode.</li> <li>5) Execute <u>Auto Color</u> item.</li> <li>6) After the "Auto Color Balance" process finished, go back to Main Menu, choose "Other settings" item and press "Enter" to enter sub-Menu , then choose "factory reset" item and press "Enter" again execute Reset all settings.</li> </ol> |

Hot Key Operation

| FUNCTION             | HOT KEY OPERATION |   |   |       |       | DESCRIPTION                                                                                                      |
|----------------------|-------------------|---|---|-------|-------|------------------------------------------------------------------------------------------------------------------|
|                      | MENU              | ↑ | ↓ | ENTER | POWER |                                                                                                                  |
| FACTORY MODE         | ●                 | ● |   |       | ON    | Press [↑]& [MENU] at the same time, and then press [POWER] for DC power on. Press the↑ key to enter factory menu |
| Brightness& Contrast |                   | ● |   |       |       | To show the Brightness& Contrast menu                                                                            |



|              |  |  |   |   |                                  |
|--------------|--|--|---|---|----------------------------------|
| AUTO ADJUST  |  |  | ● |   | Execute the AUTO ADJUST function |
| Select Input |  |  |   | ● | Select the input source          |

## OSD Control

### OSD Control

| First            | Second                 | Third             | Default | VGA Input | DVI Input |
|------------------|------------------------|-------------------|---------|-----------|-----------|
| Brightness       | Brightness             |                   | 75      | Yes       | Yes       |
|                  | Contrast               |                   | 75      | Yes       | Yes       |
| Auto Adjust      |                        |                   |         | Yes       | No        |
| Input Source     | Auto Select            |                   |         | Yes       | Yes       |
|                  | VGA                    |                   |         |           |           |
|                  | DVI-D                  |                   |         |           |           |
| Color Settings   | Input Color Format     | RGB               |         | Yes       | Yes       |
|                  |                        | YPbPr             |         |           |           |
|                  | Mode Selection         | Graphics          |         |           |           |
|                  |                        | Video             |         |           |           |
|                  | Present Modes          | Standard          |         |           |           |
|                  |                        | Multimedia        |         |           |           |
|                  |                        | Game              |         |           |           |
|                  |                        | Warm              |         |           |           |
|                  |                        | Cool              |         |           |           |
|                  |                        | Custom(R,G,B)     |         |           |           |
|                  | Reset Color Settings   |                   |         |           |           |
| Display Settings | Horizontal Position    |                   | 50      | Yes       | No        |
|                  | Vertical Position      |                   | 50      | Yes       | No        |
|                  | Sharpness              |                   | 50      | Yes       | Yes       |
|                  | Pixel Clock            |                   | 50      | Yes       | No        |
|                  | Phase                  |                   |         | Yes       | No        |
|                  | Reset Display Settings |                   |         | Yes       | Yes       |
| Other Settings   | Language               | English           |         | Yes       | Yes       |
|                  |                        | Espanol           |         |           |           |
|                  |                        | Francais          |         |           |           |
|                  |                        | Deutsch           |         |           |           |
|                  |                        | 日本語               |         |           |           |
|                  | Menu Transparency      |                   | 20      | Yes       | Yes       |
|                  | Menu Timer             |                   | 20s     | Yes       | Yes       |
|                  | Menu Lock              | Unlock            |         | Yes       | Yes       |
|                  |                        | Lock              |         | Yes       | Yes       |
|                  | DDC/CI                 | Enable            |         | Yes       | Yes       |
|                  |                        | Disable           |         | Yes       | Yes       |
|                  | LCD Conditioning       | Disable           |         | Yes       | Yes       |
|                  |                        | Enable            |         | Yes       | Yes       |
|                  | Factory Reset          | Reset All Setting |         | Yes       | Yes       |

## Factory Mode Introduction

With signal input, press “Power” button to turn off the monitor. Press “Menu” and “↑” buttons together, and then press “Power” button to turn on the monitor. After power on, press “↑” button to call out FactoryMenu(Fig.10).

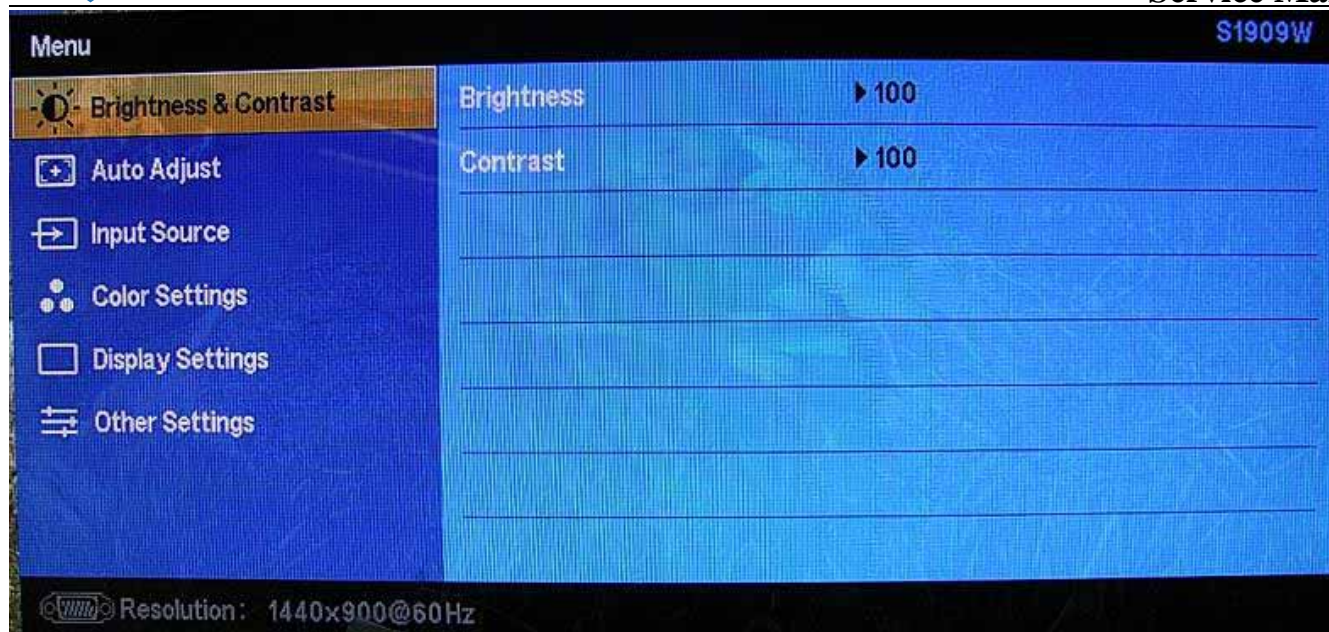


Fig9



Fig10

**Back:** Exit from **Factory mode** and back to **NO OSD Status**.

**Panel:** The current-setting panel is highlighted.

**Auto Color:** Automatically calibrate chip ADC parameters by using internal DAC.

**Burn In:** Enable or disable the Burn-in mode by choosing ON or OFF.

**Reset Timer:** Reset the "Turn-on time" of the panel to 0H0M.

**Color Temp:** The R, G, B of Blue Preset (9300K), Red Preset (5700K) and Normal Preset (6500K) are generated

from scaling chip's back-end white-balance program.

**Time:** Turn-on time of the panel.

**DEBUG:** Debug tool of scale IC U104.

#### Dell panel P/N

| LCD supplier | Panel | Supplier P/N          | Dell P/N |
|--------------|-------|-----------------------|----------|
| Samsung      | 19"W  | PANEL_SAM_LTM190M2L31 | Y714H    |

#### Burn-in pattern

Burn-in pattern will self-generate automatically without VGA and DVI cable plugged in when the monitor set at Burn-in on mode and burn-in pattern will not be stopped until plugging in the VGA cable. Exit Burn-in mode method as followe: plugging in the VGA/DVI cable, press "Menu" button to call out OSD Main Menu, Press "Plus Key" to select "Other Settings Menu" then pop submenu and choose Factory reset.

#### Auto Color Balance (Automatically calibrate chip ADC parameter by using chip internal DAC.)

5.1 If it is a new-built set, press "Auto Color" button on Factory menu to execute "Auto Color" at standard video pattern 5-MOSAIC pattern

5.2 Please confirm the following steps to perform "Auto Color Balance":

- Connect the VGA cable with the standard video pattern generator and display 5-MOSAIC pattern on the monitor.
- Press "Power" button to power off the monitor.
- Press "Menu" and "↑" buttons simultaneously; then press "Power" button to power on the monitor.
- Press "↑" to call out factory menu
- Execute Auto Color item.
- After the "Auto Color Balance" process finished, go back to "Other Settings Menu", and press "Factory Reset" to exit Factory mode

#### Upgrade Firmware to Serial via Flash Cable by ISP\_Tool V4.100.exe

7.1 Connect the monitor and PC follow Fig 11



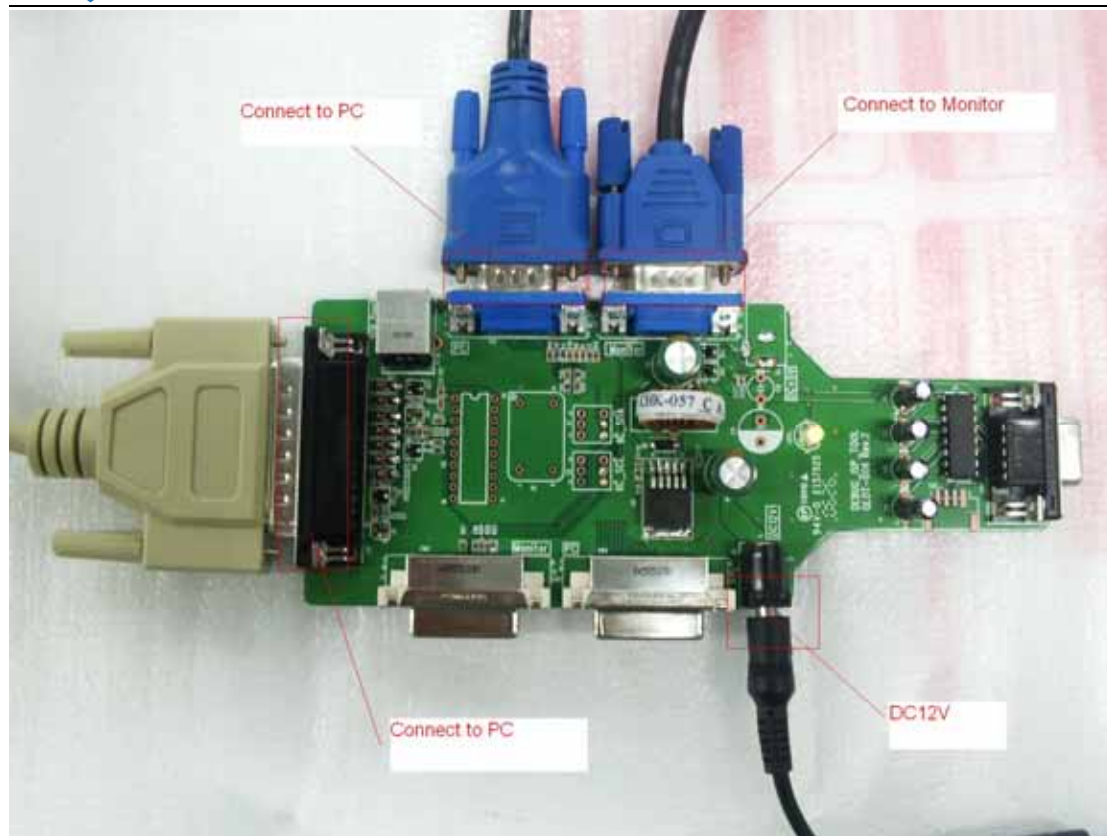


Fig 11

The detailed reprogramming procedures will be described in ISP User's Guide.



Edid 8.4.rar



Edid.rar




ISP User's Guide\_20070312.rar



ISP\_Tool V4.100.rar

After repair, to ensure the quality you should do the following test and adjustment.

| Item                                                                                                 | Content                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Equipment                                   |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------|-----------|--------|------|-------|----------|-----|-------|---------------|-----|----|---------------------------------------------------------------|
| Test OSD function                                                                                    | 1.Signal is set as 1440×900@60Hz under General-1<br>2. LCM button are from left to right, checking whether each single function key and compound function key can be worked.                                                                                                                                                                                                                                                                                 | Chroma Signal Generator                     |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Contrast Check                                                                                       | 1. Set input mode to 1440×900@60Hz<br>2. Set to 32gray scale pattern<br>3. Set contrast to the maximum. At most 6 bars cannot be distinguished.                                                                                                                                                                                                                                                                                                              | Chroma Signal Generator                     |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Color Temperature                                                                                    | 1. Do “Auto color Balance” at 1440×900@60Hz, 32gray scale pattern<br>2. Measure color temperature, check if it complies with the following temperature :<br>Warm $x=0.328 \pm 0.015$ , $y=0.344 \pm 0.015$<br>Standard $x=0.313 \pm 0.015$ , $y=0.329 \pm 0.015$<br>Cool $x=0.283 \pm 0.015$ , $y=0.298 \pm 0.015$                                                                                                                                           | Chroma Signal Generator and color analyzer  |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Modes switching check                                                                                | 1. Use Chroma Pattern Generator to make sequence. VESA (640x480 800x600 1024x768 1152x864 1280x1024 1440×900@60Hz), the detail supported modes (see table 1) and power saving signal.<br>2. Confirm the above timing modes must be full screen and the picture must be normal.<br>3. LED is amber at power saving mode.                                                                                                                                      | Chroma Signal Generator                     |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| VGA cable detector                                                                                   | When select VGA model and VGA cable is not plugged out, self-test OSD will be floated.                                                                                                                                                                                                                                                                                                                                                                       | Visual check                                |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Y measurement at default setting                                                                     | 1. Set brightness and contrast to default value 75 at 6500K<br>2. With full white pattern, Y shall be $220 \pm 20$ cd/m <sup>2</sup>                                                                                                                                                                                                                                                                                                                         | Chroma Signal Generator and Color Analyzer  |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| OSD Lock Test<br> | Soft Lock: When OSD is locked, this icon should appear for only 2 seconds with all buttons pressed, except for the “Menu” and “Power” ones.<br>Hard Lock: Press “Menu” button for 15 seconds enables the “locked” icon to be displayed, which will lock All buttons expect for the “Power”. Press “Menu” button for another 15 seconds enables the “unlock” icon to be shown.                                                                                | Visual Inspection                           |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Panel Flicker check                                                                                  | 1. Mode:1440×900@60Hz<br>2. Set Brightness& Contrast to default value (75%)<br>3. Do “Auto Adjustment”<br>4. Shut down PC to check whether there’s flicker on the center of the picture.                                                                                                                                                                                                                                                                     | Equipment::<br>Chroma Signal Generator & PC |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Power saving                                                                                         | 1. Mode:1440×900@60Hz<br>2. Pattern: full Black<br>3. Brightness: Max.<br>4. Contrast: Default<br>5. Check power consumption at each modes<br><table border="1"> <thead> <tr> <th>State</th><th>Power Consumption</th><th>LED color</th></tr> </thead> <tbody> <tr> <td>Normal</td><td>&lt;37W</td><td>White</td></tr> <tr> <td>Stand By</td><td>&lt;2W</td><td>Amber</td></tr> <tr> <td>Power Key Off</td><td>&lt;1W</td><td>No</td></tr> </tbody> </table> | State                                       | Power Consumption | LED color | Normal | <37W | White | Stand By | <2W | Amber | Power Key Off | <1W | No | Chroma signal generator and Power meter<br>AC input:230V/50Hz |
| State                                                                                                | Power Consumption                                                                                                                                                                                                                                                                                                                                                                                                                                            | LED color                                   |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Normal                                                                                               | <37W                                                                                                                                                                                                                                                                                                                                                                                                                                                         | White                                       |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Stand By                                                                                             | <2W                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Amber                                       |                   |           |        |      |       |          |     |       |               |     |    |                                                               |
| Power Key Off                                                                                        | <1W                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No                                          |                   |           |        |      |       |          |     |       |               |     |    |                                                               |

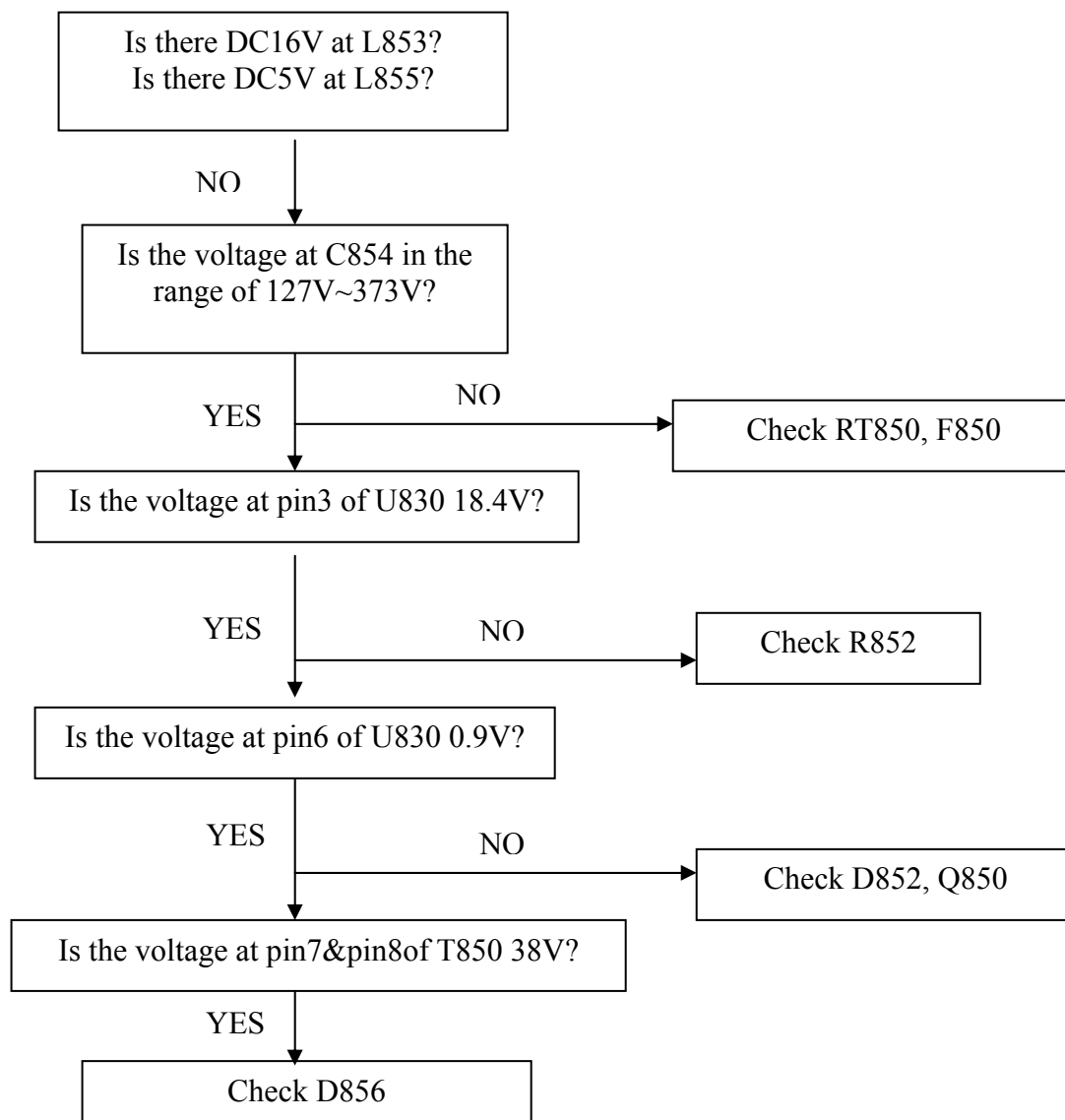


## Chapter 6- TROUBLE SHOOTING

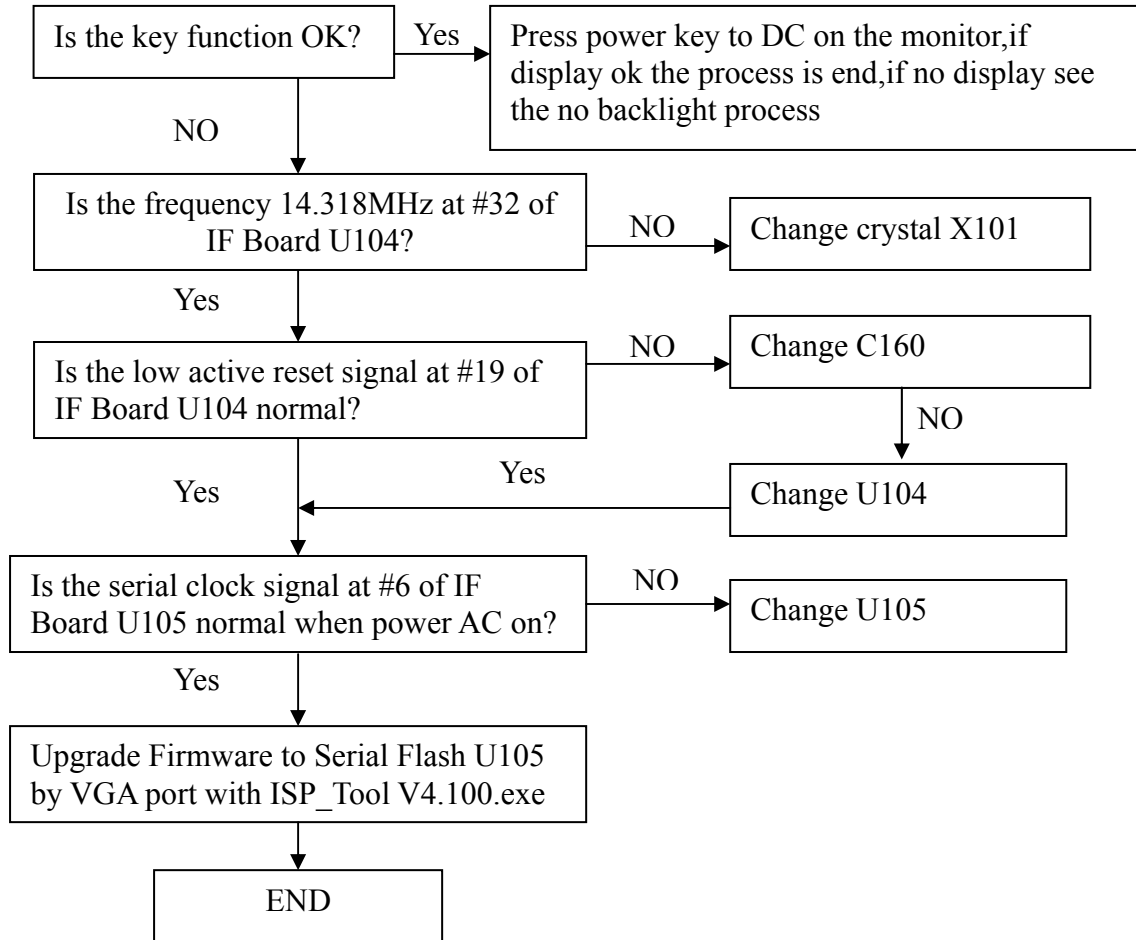
### Common Acknowledge

- If you change the M/B, be sure that the U101, U102 and U105 these three components also changed to the new M/B because there was program inside. If not, please re-write EDID or upload firmware into serial flash (U105) via VGA Cable. How to do please refer to the Page 19.
- If you adjust clock and phase, please do it at condition of Windows shut down pattern.
- Please confirm the R/G/B color under 32gray scale pattern.
- This LCM is analog interface. So if the entire screen is an abnormal color that means the problem happen in the analog circuit part, if only some scale appears abnormal color that stand the problem happen in the digital circuit part.
- If you check the H/V position, please use the crosshatch pattern.
- This LCM support 10 timing modes, if the input timing mode is out of specification, "Cannot Display this Video Mode" will be displayed on the screen.
- If brightness uneven, repairs Inverter circuit or change a new panel.
- If you find the vertical line or horizontal line lost on the screen, please change panel.
- If the self-test pattern is moving on the screen, please check whether VGA Cable is plugged in the Monitor or PC if select analog model on OSD or check whether DVI Cable is plugged in the Monitor or PC if select DVI model on OSD . If the VGA or DVI Cable is plugged in well, please change another VGA or DVI cable.

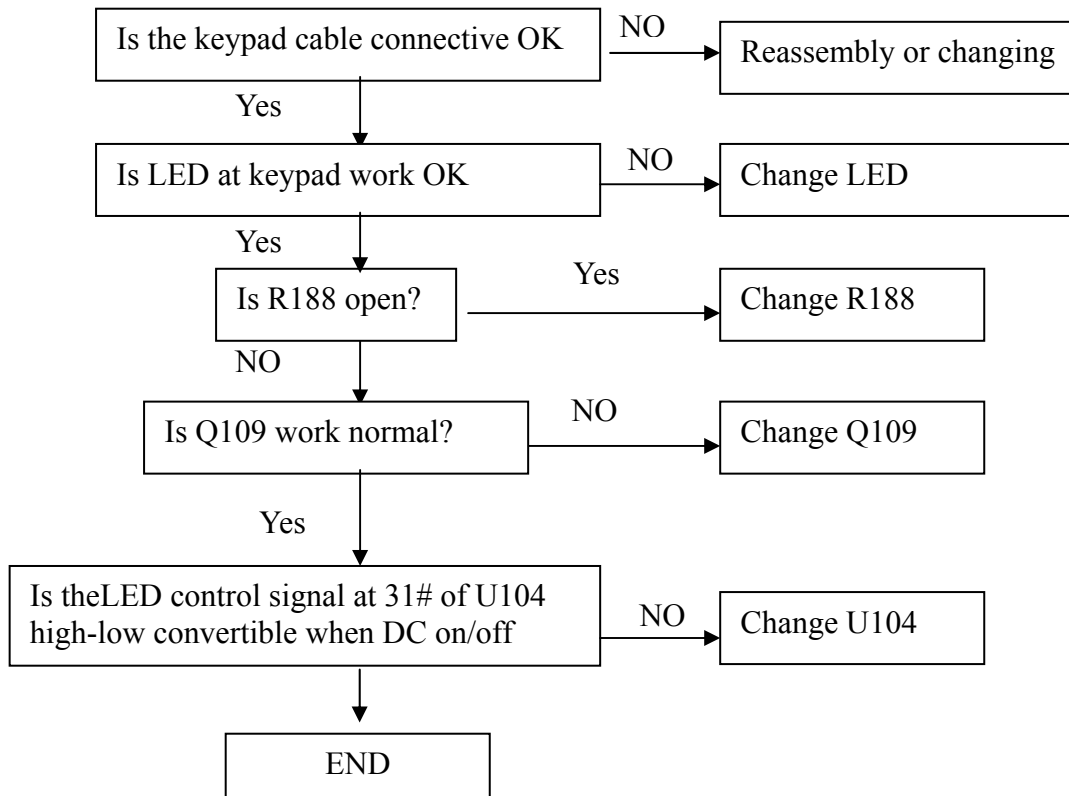
### No Power and LED Off



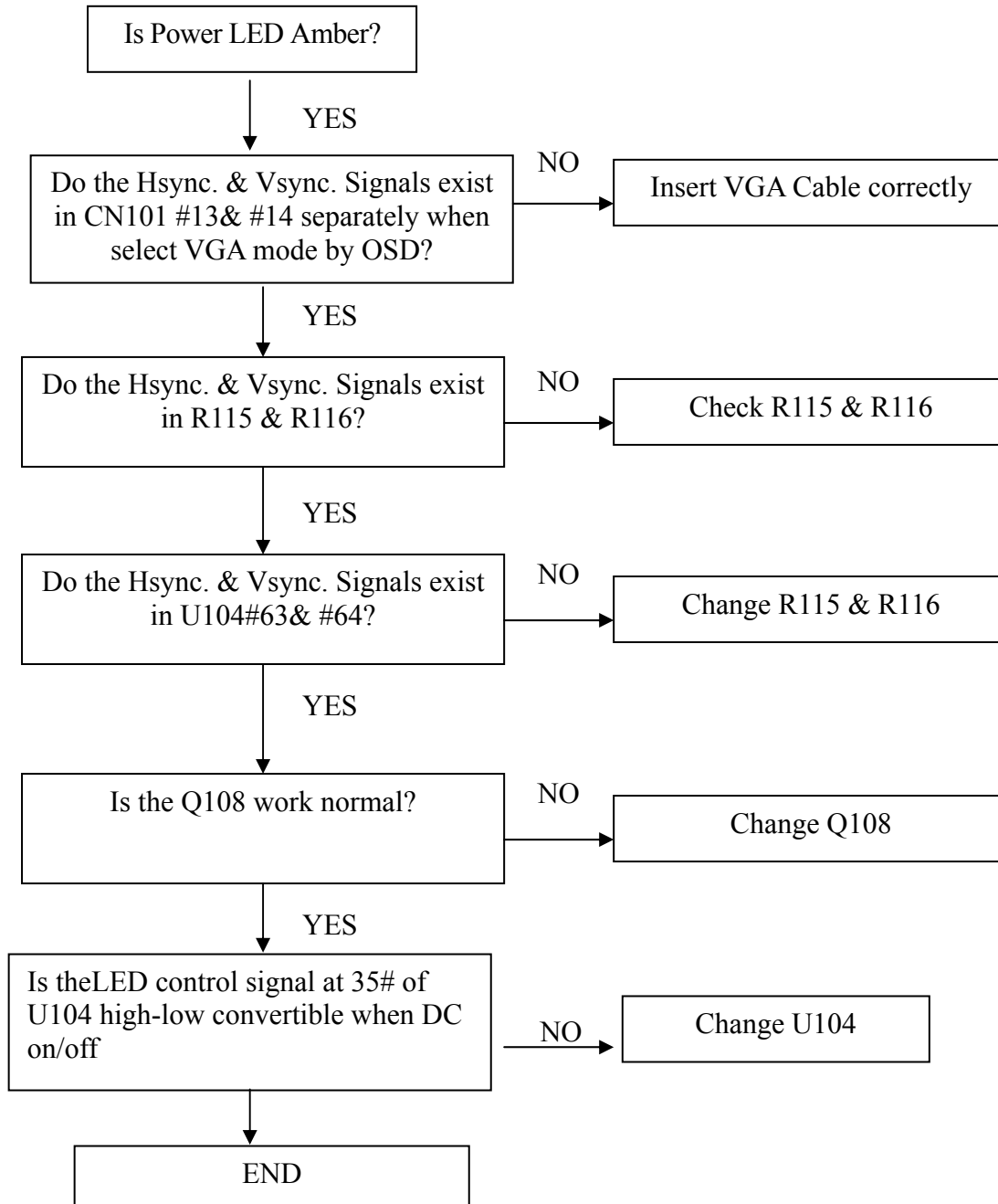
## Power (include IF +5V and +3.3V) supply normal but LED off and no display



## Power (include IF +5V and +3.3V) supply and display normal only LED off

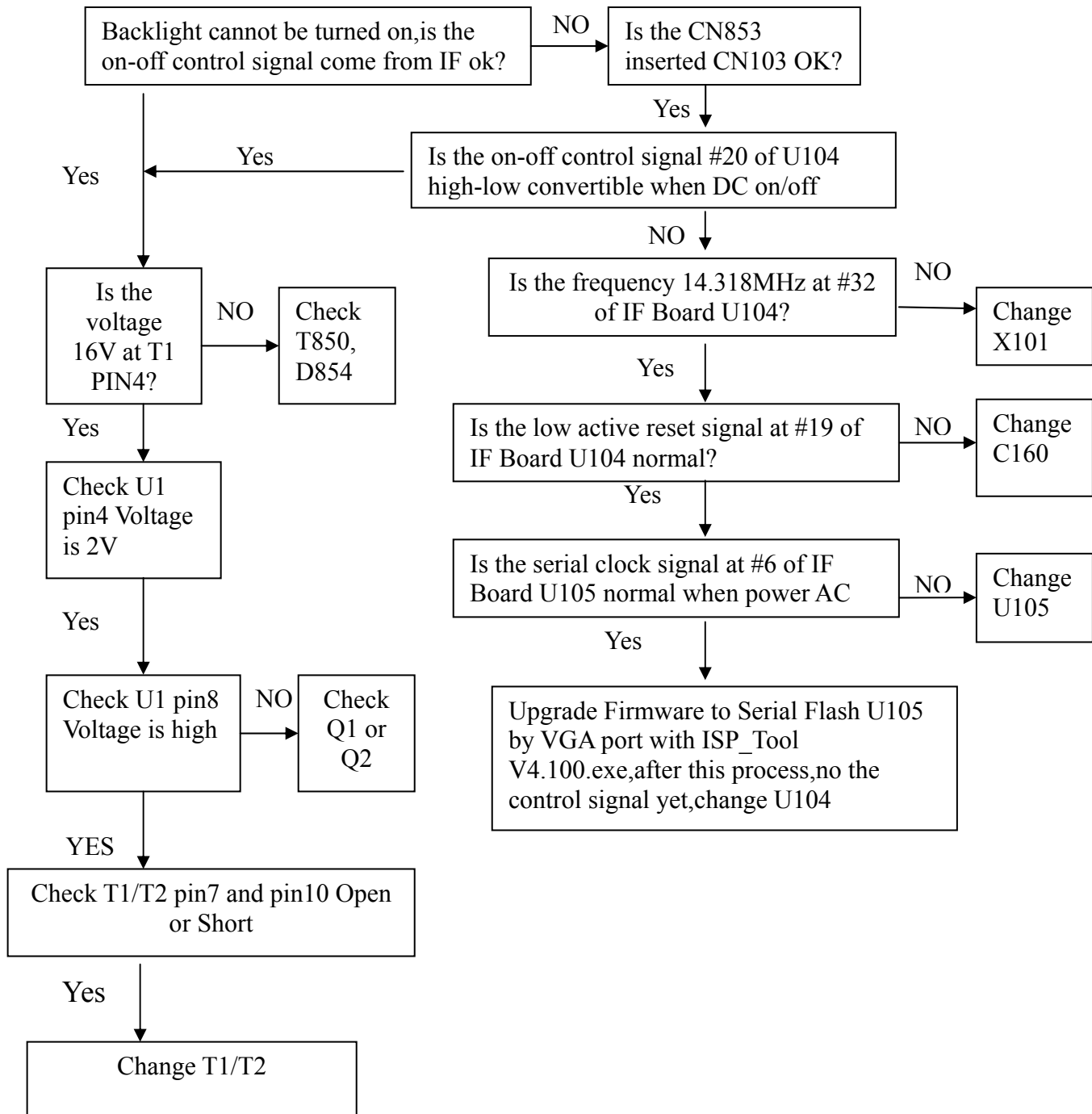


## Power (include IF +5Vand +3.3V) supply and display normal but LED Amber

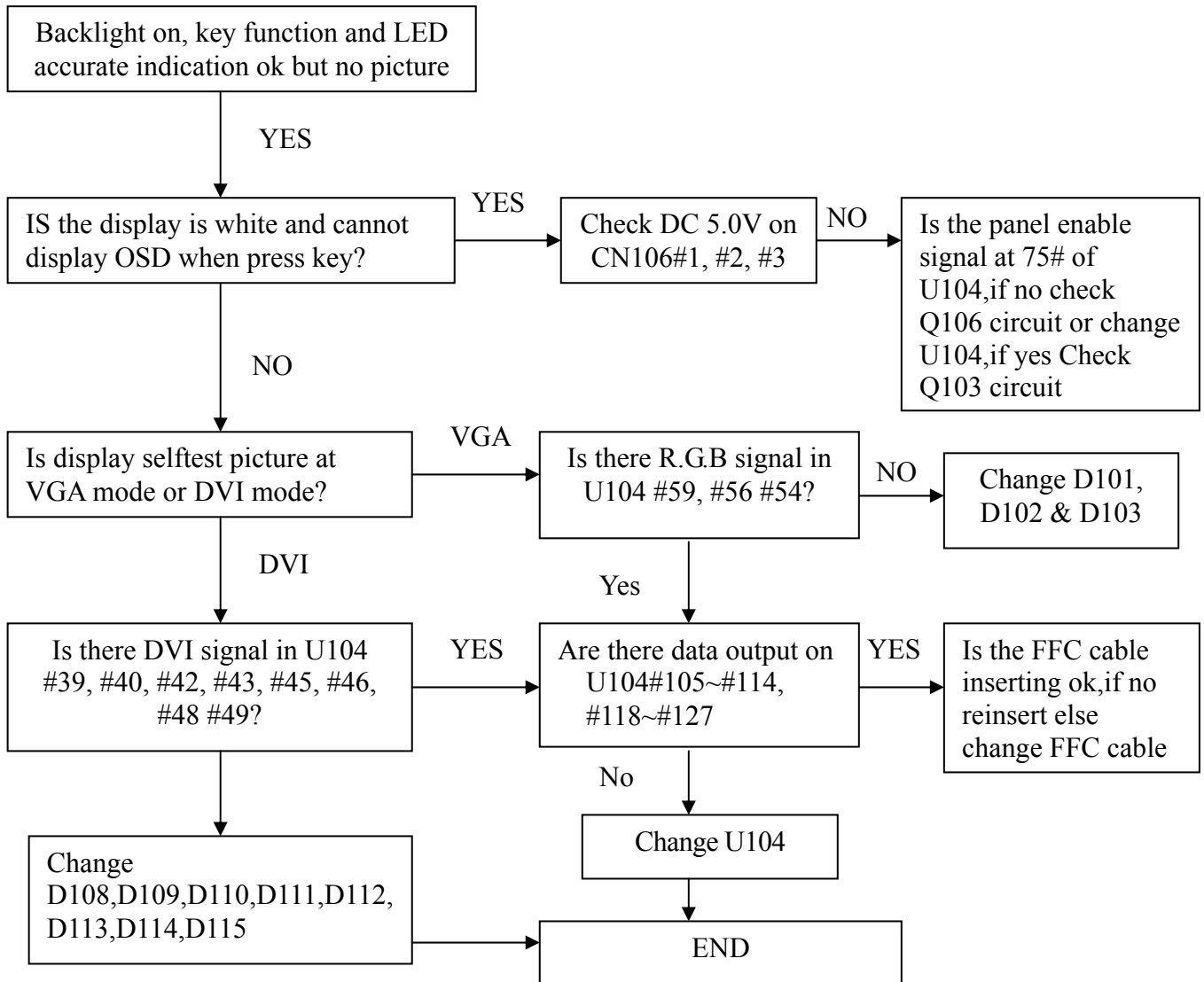


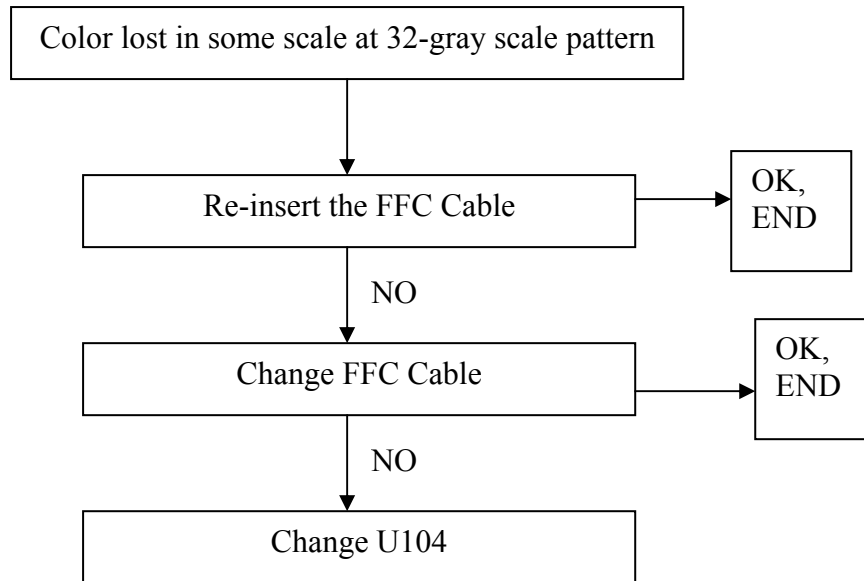


## Power (include IF +5V and +3.3V) supply normal, key function OK, but backlight can't be turned on



# Backlight on, key function and LED accurate indication ok but no picture



**At 32-gray scale pattern, color lost in some scale**

## Chapter 7- RECOMMENDED PART LIST

| Item | Category    | Component Type               | Location  | Supplier  | Component number | Supplier PN           | Object description                                | Purpose                         |
|------|-------------|------------------------------|-----------|-----------|------------------|-----------------------|---------------------------------------------------|---------------------------------|
| 1    | Function    | Power IC                     | U830      | SG        | 412000582020R    | SG5841JSZ             | IC SG5841JSZ SOP8(SG)RoHS                         | PWM Control IC for Power        |
| 2    | Function    | Inverter IC                  | U1        | O2        | 412000531630R    | OZ9937GN              | IC OZ9937GN SOP16(O2 MICRO)ROHS                   | PWM Control IC for Inverter     |
| 3    | Safety      | Inverter Transformer         | T1,T2     | FOXCONN   | 426000090600R    | 2MVL1905-007A         | XFMR SW,DIP EEL19 SPW-060,RoHS                    | High-vol. transformer for CCFLs |
|      |             |                              |           | DARFON    |                  | TK.2034.M.101         |                                                   |                                 |
|      |             |                              |           | FRONTIE   |                  | SEH1947-05-LFR        |                                                   |                                 |
|      |             |                              |           | LI SHIN   |                  | IFK5007HL             |                                                   |                                 |
| 4    | Safety      | Power Transformer            | T850      | FRONTIER, | 426000090810R    | SRF2801-17-LFR        | XFMR SW DIP ERL28 PC40 500uH SPW-081,Ro           | Transfer AC220V to DC16V/5V     |
|      |             |                              |           | FOXCONN   |                  | 2MWWA2834-006A        |                                                   |                                 |
|      |             |                              |           | LI SHIN   |                  | PFK6013EL             |                                                   |                                 |
| 5    | Safety      | Aluminium. Electrolytic CAP. | C854      | SAMXON    | 420431014083R    | EKM107M2WL40PB□□P     | CAP SEK 100uF/450V M,105 CF,18x40(2.5)            | Filter AC line voltage to DC    |
|      |             |                              |           | SU'SCON   |                  | SK450M101K40L12R      |                                                   |                                 |
|      |             |                              |           | ELITE     |                  | PW2W101MSG1840R       |                                                   |                                 |
| 6    | Performance | EEPROM                       | U101,U102 | CATALYST  | 412000480990R    | CAT24FC02WI-TE13      | IC CAT24C02WI-TE13 SOIC-8(CATALYST)RoHS           | EEPROM                          |
|      |             |                              |           | ST        | 412000480280R    | M24C02-WMN6TP         | IC M24C02-WMN6TP SO8 2K (ST)                      |                                 |
|      |             |                              |           | ATMEL     | 412000435480R    | AT24C02BN-10SU-1.8    | IC AT24C02BN-10SU-1.8 SOIC8 2K                    |                                 |
|      |             |                              |           | ATMEL     | 412000435481R    | AT24C02BN-SH-T 2K     | IC AT24C02BN-SH-T 2K SOIC8(ATMEL)RoHS             |                                 |
| 7    | Performance | EEPROM                       | U106,U107 | ATMEL     | 412000279480R    | AT24C04N-10SU-2.7     | IC AT24C04N-10SU-2.7 SOP8 4K(A TMEL)RoHS          | EEPROM                          |
|      |             |                              |           | ST        | 412000279280R    | M24C04-WMN6TP4K       | IC M24C04-WMN6TP4K SOP8 (ST) RoHS                 |                                 |
|      |             |                              |           | CATALYST  | 412000479990R    | CAT24C04WI-TE13       | IC CAT24C04WI-TE13 SOIC-8(CATALYST)RoHS           |                                 |
| 8    | Critical    | Regulator                    | U103      | ANACHIP,  | 412000332130R    | AP1117D33LA 3.3V      | IC AP1117D33LA 3.3V (ANACHIP) TO-252-3L,          | DC to DC convert                |
|      |             |                              |           | AME,      | 412000241550R    | AME1117CCCTZ 3.3V     | IC AME1117CCCTZ 3.3V,TO-252(AM E)RoHS             |                                 |
|      |             |                              |           | UTC,      | 412000332020R    | LD1117AL-3.3-A        | IC LD1117AL-3.3-A TO-252(UTC)RoHS                 |                                 |
|      |             |                              |           | A1SEMI,   | 412000332830R    | AS1117R-3.3.TR-LF,    | IC AS1117R-3.3.TR-LF,TO-252(A1 SEMI)RoHS          |                                 |
| 9    | Critical    | Regulator                    | U108      | ANACHIP   | 412000330130R    | AP1117E18LA           | IC AP1117E18LA 1.8V (ANACHIP)                     | DC to DC convert                |
|      |             |                              |           | UTC       | 412000330020R    | LD1117AL-1.8V-A       | IC LD1117AL-1.8V-A SOT223(UTC)                    |                                 |
|      |             |                              |           | A1-SEMI   | 412000330830R    | AS1117L-1.8/TR        | IC AS1117L-1.8/TR-LF,SOT223(A1                    |                                 |
|      |             |                              |           | AME       | 412000330550R    | AME1117ECGTZ          | IC AME1117ECGTZ 1.8V,SOT223(AM                    |                                 |
| 10   | Function    | Serial Flash                 | U105      | SST       | 412000494190R    | SST25LF020A-33-4C-SAE | IC SST25LF020A-33-4C-SAE SOIC8 (SST) ROHS         | F/W storage                     |
|      |             |                              |           | MXIC      | 412000661620R    | IC MX25L2025MC        | IC MX25L2025MC-11G (MXIC)RoHS                     |                                 |
|      |             |                              |           | PMC       | 412000494310R    | PM25LV020-100SCE      | IC PM25LV020-100SCE SOIC8 (PMC) RoHS              |                                 |
| 11   | Function    | Scaler                       | U104      | MSTAR     | 412000564060R    | TSUM56BWHK-LF-2       | IC TSUM56BWHK-LF-2 PQFP128 (MSTAR)                | Scaler                          |
| 12   | Function    | connector                    | CN501     | CVILUX    | 444099030040R    | C11330MG              | CON, SMD 1.0MM 30PIN with lock RoHS               | LVDS Cable Connector            |
|      |             |                              |           | P-TWO     |                  | HS9030E               |                                                   |                                 |
| 13   | PCB         | PCB                          |           | TAT CHUN  | 491391500000R    | PCB                   | PCB,keypad (4function key)BOARD, LE19D5-812 ROHS  | PCB                             |
|      |             |                              |           | HUIHO     |                  |                       |                                                   |                                 |
| 14   | PCB         | PCB                          |           | TIP TOP   | 491391500100R    | PCB                   | PCB,keypad (power key +LED)BOARD, LE19D5-812 ROHS | PCB                             |
|      |             |                              |           | EXPRESS   |                  |                       |                                                   |                                 |
| 15   | PCB         | PCB                          |           | TIP TOP   | 491391300100R    | PCB                   | PCB,I/F BOARD,LE19D5-812 ROHS                     | PCB                             |
|      |             |                              |           | EXPRESS   |                  |                       |                                                   |                                 |
| 16   | PCB         | PCB                          |           | TAT CHUN  | 491391400100R    | PCB                   | PCB,PWR&INV./B,LE19D5 ROHS                        | PCB                             |
|      |             |                              |           | HUIHO     |                  |                       |                                                   |                                 |



# ATTACHMENT 1- Bill of Material

## 1. Interface board BOM

20080122

| ITEM | P/N           | Revision | Description                              | Supplier | Usage | Location |
|------|---------------|----------|------------------------------------------|----------|-------|----------|
|      | 791431300800R |          | PCBA,I/F BOARD,W/O SPK LE19D5-812 ROHS   |          |       |          |
| 10   | 629030015700R |          | PROGRAM,W/O SPK LE19D5-812 ROHS          |          | 1     |          |
| 20   | 791431320800R |          | PCBA,I/F BOARD,W/O SPK,MI LE19D5-812 ROH |          | 1     |          |
| 30   | 791431340800R |          | PCBA,I/F BOARD,W/O SPK,SMT LE19D5-812 RO |          | 1     |          |
| 40   | 641120000010R | 11       | HDCP RECEIVE DEVICE KEY                  | DCP LLC, | 1     |          |
| 50   | 511130001200R | A        | SOLDER BAR,Sn96.5/Ag3.0/Cu0.5/Ni0.06/Ge0 | TOMAS,   | 2.1   |          |

20080126

| ITEM | P/N           | Revision | Description                              | Supplier                     | Usage | Location   |
|------|---------------|----------|------------------------------------------|------------------------------|-------|------------|
|      | 791431320800R |          | PCBA,I/F BOARD,W/O SPK,MI LE19D5-812 ROH |                              |       |            |
| 10   | 440819015030R | A        | CON D-SUB FEM.15P RA W/O SCREW DZ11AA1-H | DLK,FOXCONN,TEKCON,ZJGHJ,    | 1     | CN101,     |
| 20   | 443842024060R | B        | CON DVI-D RA 24+1P FEM.W/O SCR EW QH1112 | DLK,FOXCONN,ZJGHJ,           | 1     | CN102,     |
| 30   | 430631080170R | A        | WFR 8P 2.0MM 180° W/LOCK ROHS            | CVILUX,JOWLE,                | 1     | CN103,     |
| 40   | 430631080180R | A        | WFR 2X4P 2.0MM 180° W/LOCK ROHS          | CVILUX,FOXCONN,              | 1     | CN104,     |
| 50   | 420221010420R | A        | CAP HG 100uF/16V M,105 S,6.3X11,ROHS     | CAPXON,SAMXON,SU'SCON,TEAPO, | 1     | C130,      |
| 60   | 420422200420R | A        | CAP SD 22uF/16V M,105 S,5X11 ROHS        | CAPXON,SAMXON,SU'SCON,TEAPO, | 2     | C152,C138, |
| 70   | 432008010270R | A        | XTAL 14.31818MHz HC-49US DIP 16pF 30PPM  | HARMONY,HUAN MOUN,TXC,       | 1     | X101,      |
| 80   | 420421010420R | A        | CAP SD 100uF 16V M,105 S,5x11,RoHS       | CAPXON,SAMXON,SU'SCON,TEAPO, | 1     | C135,      |
| 90   | 420424790420R | A        | CAP SD 4.7uF 16V M,105 S,5x11,RoHS       | CAPXON,SAMXON,SU'SCON,TEAPO, | 1     | C137,      |
| 110  | 420224700220R | A        | CAP HG 47UF 25V M,105 S,5X11,ROHS        | CAPXON,SAMXON,SU'SCON,TEAPO, | 1     | C132,      |
| 120  | 420222200420R | A        | CAP HG 22uF/16V M,105 S,5X11 ROHS        | CAPXON,SAMXON,SU'SCON,TEAPO, | 1     | C144       |

20080228

| ITEM | P/N           | Revision | Description                              | Supplier                                      | Usage | Location                                                                         |
|------|---------------|----------|------------------------------------------|-----------------------------------------------|-------|----------------------------------------------------------------------------------|
|      | 791431340800R |          | PCBA,I/F BOARD,W/O SPK,SMT LE19D5-812 RO |                                               |       |                                                                                  |
| 10   | 444099030040R | A        | CON, SMD 1.0MM 30PIN with lock RoHS      | CVILUX,P-TWO,                                 | 1     | CN106,                                                                           |
| 20   | 419301010560R | A        | C SMD(0603) NPO 100PF/50V J RoHS         | MURATA,TDK,WALSIN,YAGEO,                      | 5     | C163,C164,C165,C166,C167,                                                        |
| 30   | 419351044010R | A        | C SMD(0402) X5R 0.1uF/16V K,RoHS         | MURATA,TDK,WALSIN,YAGEO,                      | 16    | C139,C140,C141,C142,C145,C146,C147,C148,C149,C153,C154,C155,C156,C157,C134,C168, |
| 40   | 419311040060R | A        | C SMD(0603) X7R 0.1uF/50V K RoHS         | MURATA,TDK,WALSIN,YAGEO,                      | 10    | C117,C120,C121,C131,C133,C136,C143,C151,C161,C162,                               |
| 50   | 419312254070R | A        | C SMD(0805) X7R 2.2uF 16V K RoHS         | DARFON,MURATA,SAMSUNG,TAIYO,TDK,WALSIN,YAGEO, | 2     | C160,C137,                                                                       |
| 50   | 419352254070R | A        | C SMD(0805) X5R 2.2uF/16V K, RoHS        | DARFON,SAMSUNG,TAIYO,WALSIN,YAGEO,            | 0     |                                                                                  |
| 70   | 419301000560R | A        | C SMD(0603) NPO 10PF/50V J RoHS          | MURATA,TDK,WALSIN,YAGEO,                      | 2     | C158,C159,                                                                       |
| 80   | 419302700560R | A        | C SMD(0603) NPO 27PF/50V J RoHS          | MURATA,TDK,WALSIN,YAGEO,                      | 2     | C116,C115,                                                                       |
| 90   | 419314734010R | A        | C SMD(0402) X7R 0.047uF/16V K,RoHS       | DARFON,TDK,WALSIN,YAGEO,                      | 7     | C101,C102,C103,C104,C106,C108,C110,                                              |
| 100  | 414918010050R | A        | RES SMD (0402) 10Ω J,RT,RoHS             | TA-I,WALSIN,YAGEO,                            | 8     | R130,R131,R132,R133,R134,R135,R137,R138,                                         |
| 110  | 414916000050R | A        | RES SMD (0603) 0Ω J,RT RoHS              | TA-I,WALSIN,YAGEO,                            | 1     | FB104,                                                                           |
| 120  | 414918047150R | A        | RES SMD (0402) 470Ω J,RT,RoHS            | TA-I,WALSIN,YAGEO,                            | 1     | R104,                                                                            |
| 130  | 414918560910R | A        | RES SMD (0402) 56Ω F,RT,RoHS             | TA-I,WALSIN,YAGEO,                            | 3     | R101,R102,R103,                                                                  |
| 140  | 414916010150R | A        | RES SMD (0603) 100Ω J,RT RoHS REV:A      | TA-I,WALSIN,YAGEO,                            | 2     | R185,R186,                                                                       |

|     |               |   |                                          |                    |    |                                                                                                                                    |
|-----|---------------|---|------------------------------------------|--------------------|----|------------------------------------------------------------------------------------------------------------------------------------|
| 150 | 414916010250R | A | RES SMD (0603) 1KΩ J,RT RoHS REV:A       | TA-I,WALSIN,YAGEO, | 10 | R113,R115,R116,R143,<br>R155,R156,R167,R168<br>,R175,                                                                              |
| 160 | 414916010350R | A | RES SMD (0603) 10KΩ J,RT RoHS            | TA-I,WALSIN,YAGEO, | 22 | R111,R119,R120,R123,<br>R128,R129,R136,R151,<br>R152,R157,R158,R160,<br>R161,R164,R172,R174,<br>R178,R179,R181,R182,<br>R183,R184, |
| 170 | 414918010450R | A | RES SMD (0402)100KΩ J,RT,RoHS            | TA-I,WALSIN,YAGEO, | 1  | R147,                                                                                                                              |
| 180 | 414916027350R | A | RES SMD (0603) 27KΩ J,RT RoHS            | TA-I,WALSIN,YAGEO, | 1  | R150,                                                                                                                              |
| 200 | 414916022250R | A | RES SMD (0603) 2.2KΩ J,RT RoHS           | TA-I,WALSIN,YAGEO, | 2  | R118,R117,                                                                                                                         |
| 210 | 414918390010R | A | RES SMD (0402) 390Ω F,RT,RoHS            | TA-I,WALSIN,YAGEO, | 1  | R154,                                                                                                                              |
| 220 | 414916047050R | A | RES SMD (0603) 47Ω J,RT RoHS             | TA-I,WALSIN,YAGEO, | 4  | R121,R122,R126,R127,                                                                                                               |
| 230 | 414916047250R | A | RES SMD (0603) 4.7KΩ J,RT RoHS           | TA-I,WALSIN,YAGEO, | 1  | R139,                                                                                                                              |
| 240 | 414916750910R | A | RES SMD (0603) 75Ω F,RT RoHS REV:A       | TA-I,WALSIN,YAGEO, | 3  | R105,R106,R107,                                                                                                                    |
| 250 | 411020026210R | A | DIO BAV99 350mW 70V SOT-23(PHI RoHS      | PHILIPS,           | 12 | D101,D102,D103,D106,<br>D108,D109,D110,D111,<br>D112,D113,D114,D115,                                                               |
| 250 | 411020026390R | A | DIO BAV99,SOT-23(INFINEON)RoHS           | INFINEON,          | 0  |                                                                                                                                    |
| 250 | 411020026020R | A | DIO BAV99-LF 350mW 70V SOT-23 (FEC)RoHS  | FRONTIER,          | 0  |                                                                                                                                    |
| 250 | 411020026090R | A | DIO BAV99 350mW 75V SOT-23(PEC RoHS      | PANJIT,            | 0  |                                                                                                                                    |
| 260 | 411020047210R | A | DIO BAV70 85V SOT23 (PHILIPS) RoHS       | PHILIPS,           | 2  | D104,D107,                                                                                                                         |
| 260 | 411020047020R | A | DIO BAV70-LF, 70V SOT-23(FEC) ROHS       | FRONTIER,          | 0  |                                                                                                                                    |
| 290 | 432002319041R | A | BEAD CORE SMD(0603)19Ω 500mA, SBK160808  | CHILISIN,TAI-TECH, | 3  | FB101,FB102,FB103,                                                                                                                 |
| 300 | 432002360012R | A | BEAD CORE SMD(0805)60Ω 800mA GBK201209T  | CHILISIN,TAI-TECH, | 3  | FB105,FB106,FB107,                                                                                                                 |
| 310 | 410500045210R | A | XSTR PMBT3904 NPN 200MA,40V SOT23(PHILIP | PHILIPS,           | 3  | Q102,Q106,Q101,                                                                                                                    |
| 310 | 410500045140R | A | XSTR MMBT3904LT1G NPN 200MA 40V SOT23(ON | ON SEMI,           | 0  |                                                                                                                                    |
| 310 | 410500045090R |   | XSTR MMBT3904 NPN SOT-23(PANJIT)RoHS     | PANJIT,            | 0  |                                                                                                                                    |
| 320 | 410500068290R | A | XSTR AP2305GN P-CH SOT23(APEC) RoHS      | APEC,              | 1  | Q103,                                                                                                                              |
| 320 | 410500075270R | A | XSTR AO3415 P-CH,SOT23(AOS) RoHS         | AOS,               | 0  |                                                                                                                                    |
| 320 | 410060011390R | A | XSTR ASM2307M/TR-LF P-CH SOT-23(A1SEMI)R | A1SEMI,            | 0  |                                                                                                                                    |
| 330 | 410500046210R | A | XSTR PMBT3906 PNP 200MA,40V SOT23(PHILIP | PHILIPS,           | 2  | Q109,Q108,                                                                                                                         |
| 330 | 410500046130R | A | XSTR MMBT3906 PNP SOT-23(INFIN EON)RoHS  | INFINEON,          | 0  |                                                                                                                                    |
| 330 | 410500046180R | A | XSTR MMBT3906LT1G PNP 200mA 40V SOT23(ON | ON SEMI,           | 0  |                                                                                                                                    |
| 330 | 410500046090R | A | XSTR MMBT3906 PNP SOT-23(PANJIT)RoHS     | PANJIT,            | 0  |                                                                                                                                    |
| 340 | 412000435481R | A | IC AT24C02BN-SH-T 2K SOIC8(ATMEL)RoHS    | ATMEL,             | 2  | U101,U102,                                                                                                                         |
| 340 | 412000480280R | A | IC M24C02-RMN6TP SO8(ST)RoHS             | ST,                | 0  |                                                                                                                                    |
| 340 | 412000480990R | A | IC CAT24C02WI-TE13 SOIC-8(CATALYST)RoHS  | CATALYST,          | 0  |                                                                                                                                    |
| 350 | 412000564060R | A | IC TSUM56BWHK-LF-2 PQFP128(MSTAR)        | MSTAR,             | 1  | U104,                                                                                                                              |
| 360 | 412000494190R | A | IC SST25LF020A-33-4C-SAE SOIC8(SST)ROHS  | SST,               | 1  | U105,                                                                                                                              |
| 360 | 412000661620R | A | IC MX25L2025MC-11G (MXIC)RoH             | MXIC,              | 0  |                                                                                                                                    |
| 360 | 412000494310R | A | IC PM25LV020-100SCE SOIC8(PMC)RoHS       | PMC,               | 0  |                                                                                                                                    |
| 370 | 412000279480R | A | IC AT24C04N-10SU-2.7 SOP8 4K(A TMEL)RoHS | ATMEL,             | 2  | U107,U106,                                                                                                                         |
| 370 | 412000279280R | A | IC M24C04-WMN6TP4K SOP8 (ST) RoHS        | ST,                | 0  |                                                                                                                                    |
| 370 | 412000479990R | A | IC CAT24C04WI-TE13 SOIC-8(CATALYST)RoHS  | CATALYST,          | 0  |                                                                                                                                    |
| 380 | 411131562950R | A | ZENER 6.2V BZT52C6V2-7-F SOD-123(DIODES) | DIODES,            | 9  | ZD101,ZD102,ZD103,<br>ZD104,ZD105,ZD106,<br>ZD107,ZD108,<br>ZD109,                                                                 |
| 380 | 411121462950R | A | ZENER 6.2V BZT52-C6V2 SOD-123(WILLAS)ROH | WILLAS,            | 0  |                                                                                                                                    |

|     |               |   |                                                            |     |                 |
|-----|---------------|---|------------------------------------------------------------|-----|-----------------|
| 380 | 411130962950R | A | ZENER 6.2V MMSZ5234B PANJIT,                               | 0   |                 |
| 390 | 412000330020R | A | IC LD1117AL-1.8V-A SOT223(UTC) RoHS UTC,                   | 1   | U108,           |
| 390 | 412000330130R | A | IC AP1117E18LA 1.8V (ANACHIP) SOT223-3L ANACHIP,           | 0   |                 |
| 390 | 412000330830R | A | IC AS1117L-1.8/TR-LF,SOT223(A1 SEMI)RoHS A1SEMI,           | 0   |                 |
| 390 | 412000330550R | A | IC AME1117ECGTZ 1.8V,SOT223(AM E)RoHS AME,                 | 0   |                 |
| 400 | 419311020010R | A | C SMD(0402) X7R 1000PF/50V K,RoHS MURATA,TDK,WALSIN,YAGEO, | 2   | C170,C171,      |
| 410 | 414916010050R | A | RES SMD (0603) 10Ω J,RT RoHS TA-I,WALSIN,YAGEO,            | 2   | R159,R165,      |
| 420 | 414918010150R | A | RES SMD (0402) 100Ω J,RT,RoHS TA-I,WALSIN,YAGEO,           | 3   | R108,R109,R110, |
| 430 | 419341054660R | A | C SMD(0603) Y5V 1uF/16V Z,RoHS MURATA,TDK,WALSIN,YAGEO,    | 1   | C150,           |
| 440 | 491391300100R |   | PCB,I/F BOARD,LE19D5 ROHS EXPRESS,TIP TOP,                 | 1   |                 |
| 450 | 511130002200R | A | SOLDER PASTE,Sn96.5-Ag3.0-Cu0.5 ROHS TOMAS,                | 0.5 |                 |
| 450 | 511130002201R | A | SOLDER PASTE,Sn96.5%Ag3.0%Cu0.5% TOMAS,                    | 0   |                 |
| 450 | 511130002202R | A | SOLDER PASTE,Sn95.5%Ag3.9%Cu0.6% TAMURA,                   | 0   |                 |
| 480 | 506140005700R | A | LABEL,BARCODE,BLANK,33x7mm, ROHS,FOR PCB JIAYINMEI,KAIDA,  | 1   |                 |
| 490 | 414916022150R | A | RES SMD (0603) 220Ω J,RT RoHS REV:A TA-I,WALSIN,YAGEO,     | 1   | R187,           |
| 500 | 414918010350R | A | RES SMD (0402) 10KΩ J,RT,RoHS TA-I,WALSIN,YAGEO,           | 3   | R124,R141,R114  |
| 510 | 414918000050R | A | RES SMD (0402) 0Ω J,RT,RoHS TA-I,WALSIN,YAGEO,             | 2   | R142,           |
| 520 | 414918010250R | A | RES SMD (0402) 1KΩ J,RT,RoHS TA-I,WALSIN,YAGEO,            | 1   | R125,           |
| 530 | 414916100210R | A | RES SMD (0603) 10KΩ F,RT RoHS TA-I,WALSIN,YAGEO,           | 2   | R173,R153,      |
| 540 | 412000332130R | A | IC AP1117D33LA 3.3V (ANACHIP) TO-252-3L, ANACHIP,          | 1   | U103,           |
| 540 | 412000241550R | A | IC AME1117CCCTZ 3.3V,TO-252(AM E)RoHS AME,                 | 0   |                 |
| 540 | 412000332020R | A | IC LD1117AL-3.3-A TO-252(UTC)RoHS UTC,                     | 0   |                 |
| 540 | 412000332830R | A | IC AS1117R-3.3.TR-LF,TO-252(A1 SEMI)RoHS A1SEMI,           | 0   |                 |
| 550 | 414916047150R | A | RES SMD (0603) 470Ω J,RT,RoHS TA-I,WALSIN,YAGEO,           | 1   | R188,           |

## 2. Power board BOM

| ITEM | P/N           | Revision | Description                              | Supplier                                       | Usage | Location         |
|------|---------------|----------|------------------------------------------|------------------------------------------------|-------|------------------|
|      | 791431400800R |          | PCBA,PWR&INV./B,LE19D5-812 ROHS          |                                                |       |                  |
| 10   | 416203323620R | A        | CAP MEY 3300pF 250V M Y2 Y5V P=10mm,W/O  | JNC,POE, SUCCESS(SEC),TDK,                     | 2     | C850,C851,       |
| 20   | 416194743011R | A        | CAP MEX 0.47uF 275V K X2,F15 RoHS        | ARCOTRONIC,SCC, EUROPTRONIC,HJC,               | 1     | C852,            |
| 30   | 416191043010R | A        | CAP MEX 0.1uF 275V K X2,F15 RoHS         | ARCOTRONIC,SCC, EUROPTRONIC,HJC,               | 1     | C853,            |
| 40   | 420431014083R | A        | CAP SEK 100uF/450V M,105 CF,18x40(2.5)   | ELITE,SAMXON,SU'SCON,                          | 1     | C854,            |
| 50   | 416213323620R | A        | CAP MEY 3300pF 250V M Y1,F10mm W/O FORMI | POE,SUCCESS(SEC),                              | 1     | C860,            |
| 50   | 416203324620R | A        | CAP MEY 3300pF 400V M Y,P10mm W/O FORMIN | JNC,                                           | 0     |                  |
| 60   | 416304723510R | A        | CAP PP 0.0047uF 250V J,F7.5 RoHS         | EUROPTRONIC,HJC,SCC,                           | 1     | C880,            |
| 70   | 418103051920R | A        | CAP CD NPO 3pF 3KV D,S7.5, RoHS          | SUCCESS(SEC),                                  | 2     | C33,C34,         |
| 70   | 418103058920R | A        | CAP CD SL 3pF 3KV D,S7.5,RoHS            | JNC,                                           | 0     |                  |
| 70   | 418103051820R | A        | CAP CD NPO 3pF 3KV C,S7.5,RoHS           | VISHAY,                                        | 0     |                  |
| 80   | 418115051520R | A        | CAP CD NPO 15pF 3KV J,S7.5 RoHS          | SUCCESS(SEC),                                  | 2     | C31,C32,         |
| 80   | 418115058520R | A        | CAP CD SL 15pF 3KV J,S7.5,RoHS           | JNC,TDK,                                       | 0     |                  |
| 90   | 411050007010R | A        | DIO BRDG KBL405G 600V/4A(TSC) RoHS       | TSC,                                           | 1     | D850,            |
| 90   | 411050006041R | A        | DIO BRDG KBL06M 600V/4A(MOSPEC RoHS      | MOSPEC,                                        | 0     |                  |
| 90   | 411050005021R | A        | DIO BRDG BL4-06-G-BF52-LF 600V/4A(FEC)Ro | FRONTIER,                                      | 0     |                  |
| 100  | 412140002380R | A        | IC LTV817M-PR VDE (LITE-ON) P=10mm RoHS  | LITEON,                                        | 1     | I850,            |
| 110  | 425000010900R | A        | COIL CHK 17mH A10 ET24 CHK-090,RoHS      | FOXCONN,FRONTIER, LISHIN,                      | 1     | L851,            |
| 120  | 432002200190R | A        | FERR BEAD 3.5x9x0.65,VT,RoHS,RH03509ST-B | CHILISIN,TAI-TECH,                             | 1     | L852,            |
| 130  | 425000010690R | A        | COIL CHK 4.5uH DR10x10 CHK-069 RoHS      | CHILISIN,DARFON, EASYMAGNET, FOXCONN,FRONTIER, | 3     | L853,L855, L856, |
| 160  | 430300801820R |          | HRN ASS'Y 8P 120mm UL1007#24 ROHS        | FOXCONN,HEIGHTEN,JVE,                          | 1     | CN853,           |
| 170  | 440149000350R | A        | SKT AC 10A/250V U/C/V, H 1.0MM ROHS      | TECX,DLK                                       | 1     | CN850,           |
| 200  | 415350823550R | A        | RES MOF 2W 82KΩ J,MINI,HK15 RoHS         | FUTABA,QUEENMAO,TZAI YUAN,                     | 1     | R880,            |



|     |               |   |                                          |                                  |      |                   |
|-----|---------------|---|------------------------------------------|----------------------------------|------|-------------------|
| 210 | 415502208521R |   | RES WW NKNP 2W 0.2Ω J,VF7.5 MINI ROHS    | FUTABA,QUEENMAO,TZAI YUAN,       | 1    | R859,             |
| 220 | 415350100550R | A | RES MOF 2W 10Ω J,MINI,HK15, RoHS         | FUTABA,QUEENMAO,TZAI YUAN,       | 2    | R860,R869,        |
| 230 | 432009401000R | A | NTC 8Ω 5A +-20% 15ψ P=7.5mm,RoHS         | THINKING,                        | 1    | RT850,            |
| 240 | 426000090600R | A | XFMR SW,DIP EEL19 SPW-060,RoHS           | DARFON,FOXCONN, FRONTIER,LISHIN, | 2    | T1,T2,            |
| 250 | 426000090810R | A | XFMR SW DIP ERL28 PC40 500uH SPW-081,Ro  | FOXCONN,FRONTIER, LISHIN,        | 1    | T850,             |
| 260 | 430637020030R | A | WFR. 2P P=3.5mm 90°W/LOCK,RoHS           | FCN,FOXCONN,                     | 4    | CN1,CN2, CN3,CN4, |
| 270 | 410500071290R | A | XSTR AP9971GD,N-CH,PDIP-8(APEC RoHS      | APEC,                            | 2    | Q1,Q2,            |
| 270 | 410500061271R | A | XSTR AOP802 DUAL N-CH PDIP-8(AOS)RoHS    | AOS,                             | 0    |                   |
| 290 | 735110002980R |   | ASSY,H/S,SP10200-LF ,LE19D5 ROHS         |                                  | 1    |                   |
| 310 | 735110007000R |   | ASSY,H/S,AP2761I-A,LE19D5 ROHS           |                                  | 1    |                   |
| 320 | 735110007020R |   | ASSY,H/S,SFR10-10CT-LF,LE19D5 ROHS       |                                  | 1    |                   |
| 330 | 791431440800R |   | PCBA,PWR&INV./B,SMD,LE19D5-812 ROHS      |                                  | 1    |                   |
| 340 | 511130001200R | A | SOLDER BAR,Sn96.5/Ag3.0/Cu0.5/Ni0.06/Ge0 | TOMAS,                           | 10   |                   |
| 350 | 511110000101R | A | HOT-MELT ADHESIVES (#526)                | EXCELSTAR,                       | 5    |                   |
| 360 | 511110000103R | A | HOT-MELT ADHESIVES,UB-618                | U-BOND,                          | 5    |                   |
| 370 | 511110000501R | A | SILICONE RTV RUBBER,UB-511(EURO)         | EURO,                            | 0.45 |                   |
| 380 | 502040603200R | A | SHIELD TRANSFORMER LE1703 RoHS           | ORIENTAL POWER, TOP RICH,        | 1    | SP1,              |
| 390 | 418310413630R | A | CAP CD Y5V 0.1uF 50V Z,VT RoHS           | JNC,POE,SUCCESS(SEC),            | 2    | C855,C40,         |
| 400 | 410052001370R | A | XSTR SF0R3G42 TO-92 VT(TOSHIBA RoHS      | TOSHIBA,                         | 1    | Q851,             |
| 400 | 410052005150R | A | THYRI MCR101L-6 TO-92(UTC)RoHS           | UTC,                             | 0    |                   |

| ITEM | P/N           | Revision | Description                              | Supplier                      | Usage | Location |
|------|---------------|----------|------------------------------------------|-------------------------------|-------|----------|
|      | 735110002980R |          | ASSY,H/S,SP10200-LF ,LE19D5 ROHS         |                               |       |          |
| 10   | 411090031460R | A        | SCHTKY SP10200-LF 200V/10A ITO220(SECOS) | SECOS,                        | 1     | D854,    |
| 10   | 411090031040R | A        | SCHTKY SRF10200C 200V/10A(MOSP EC)ITO-22 | MOSPEC,                       | 0     |          |
| 10   | 411090031010R | A        | SCHTKY MBRF10200CT 200V/10A ITO220AB(TSC | TSC,                          | 0     |          |
| 10   | 411090030020R | A        | SCHTKY SRF10-20CT-LF 200V/10A,ITO-220AB( | FRONTIER,                     | 0     |          |
| 20   | 507200007600R |          | HEATSINK,"U" ,LE19D5,                    | DMC,ORIENTAL POWER,ZHONGJIAN, | 1     |          |
| 30   | 509146308102R | A        | SCREW,PW,CROSS W/WAS,M3*8,Zn             | GAOYI,LIQUAN,YIJIE,           | 1     |          |

| ITEM | P/N           | Revision | Description                              | Supplier                      | Usage | Location |
|------|---------------|----------|------------------------------------------|-------------------------------|-------|----------|
|      | 735110007000R |          | ASSY,H/S,AP2761I-A,LE19D5 ROHS           |                               |       |          |
| 10   | 410050060130R | A        | XSTR SPA06N80C3 N-CH PG-TO220- 3-31(INFI | INFINEON,                     | 1     | Q850,    |
| 10   | 410050103050R |          | XSTR FMA09N65GX N-CH TO-220F(FUJI) RoHS  | FUJI,                         | 0     |          |
| 10   | 410500059290R | A        | XSTR AP2761I-A N-CH TO-220CFM ADVANCED P | APEC,                         | 0     |          |
| 20   | 507200004310R | A        | HEATSINK,45x16.7x10mm(TWO HOL E),LE1911  | DMC,ORIENTAL POWER, TOP RICH, | 1     |          |
| 30   | 509146308102R | A        | SCREW,PW,CROSS W/WAS,M3*8,Zn             | GAOYI,LIQUAN,YIJIE,           | 1     |          |

| ITEM | P/N           | Revision | Description                              | Supplier                               | Usage | Location |
|------|---------------|----------|------------------------------------------|----------------------------------------|-------|----------|
|      | 735110007010R |          | ASSY,H/S,AP1506-ADJT5RL,LE19D5 ROHS      |                                        |       |          |
| 10   | 412000407130R | A        | IC AP1506-ADJT5RL TO220-5L(R) ANACHIP)Ro | ANACHIP,                               | 1     | U851,    |
| 10   | 412000408200R | A        | IC LM2596T-ADJ TO-220(T)(NS)Ro HS        | NS,                                    | 0     |          |
| 10   | 412000407650R | A        | IC AX3002-T5R TO220-5L-R(Axelite)RoHS    | AXELITE,                               | 0     |          |
| 20   | 507300003400R | A        | HEATSINK,"-", LE1513                     | DMC,K-ENERGY, TOP RICH, ORIENTAL POWER | 1     |          |
| 30   | 509146306200R | A        | SCREW,P,CROSS,W/WAS,M3*6,Zn-Cc           | GAOYI,LIQUAN,YIJIE,                    | 1     |          |

| ITEM | P/N           | Revision | Description                              | Supplier                               | Usage | Location |
|------|---------------|----------|------------------------------------------|----------------------------------------|-------|----------|
|      | 735110007020R |          | ASSY,H/S,SFR10-10CT-LF,LE19D5 ROHS       |                                        |       |          |
| 10   | 411090009020R | A        | SCHTKY SRF10-10CT-LF 100V/10A TO-220AB(F | FRONTIER,                              | 1     | D856,    |
| 10   | 411090009040R | A        | SCHTKY SRF10100C 100V/10A(MOSP EC)ITO-22 | MOSPEC,                                | 0     |          |
| 10   | 411090009010R | A        | SCHTKY MBRF10100CT 100V/10A(TS C)ITO-220 | TSC,                                   | 0     |          |
| 10   | 411090028090R | A        | SCHTKY SB10100FCT 100V/10A ITO -220AB(PA | PANJIT,                                | 0     |          |
| 20   | 507200004200R | A        | HEATSINK,35x16.7x10mm, LE1911            | DMC,K-ENERGY,ORIENTAL POWER, TOP RICH, | 1     |          |
| 30   | 509146308102R | A        | SCREW,PW,CROSS W/WAS,M3*8,Zn             | GAOYI,LIQUAN,YIJIE,                    | 1     |          |

| ITEM | P/N           | Revision | Description                         | Supplier | Usage | Location |
|------|---------------|----------|-------------------------------------|----------|-------|----------|
|      | 791431440800R |          | PCBA,PWR&INV./B,SMD,LE19D5-812 ROHS |          |       |          |



|     |               |   |                                          |                                                  |      |                            |
|-----|---------------|---|------------------------------------------|--------------------------------------------------|------|----------------------------|
| 10  | 419311020060R | A | C SMD(0603) X7R 1000PF/50V K RoHS        | DARFON,TDK,WALSIN, YAGEO,                        | 2    | C2,C3,                     |
| 20  | 419301010560R | A | C SMD(0603) NPO 100PF/50V J RoHS         | DARFON,TDK,WALSIN,YAGEO                          | 1    | C837,                      |
| 30  | 419311030070R | A | C SMD(0805) X7R 0.01uF/50V K RoHS        | DARFON,TDK,WALSIN,YAGEO                          | 2    | C839,C867,                 |
| 50  | 419311040070R | A | C SMD(0805) X7R 0.1uF/50V K RoHS REV:A   | DARFON,MURATA, TDK,WALSIN,YAGEO,                 | 4    | C872 , C7, C23,C24,        |
| 60  | 419314733060R | A | C SMD(0603) X7R 0.047uF/25V K RoHS       | DARFON,TDK,WALSIN,YAGEO,                         | 1    | C8,                        |
| 70  | 419301510560R | A | C SMD(0603) NPO 150PF/50V J RoHS         | MURATA,TDK,WALSIN,YAGEO,                         | 1    | C9,                        |
| 80  | 419311020070R | A | C SMD(0805) X7R 1000PF/50V K RoHS        | DARFON,TDK,WALSIN,YAGEO,                         | 4    | C25,C26, C27,C28,          |
| 90  | 419314723060R | A | C SMD(0603) X7R 4700pF/25V K RoHS        | DARFON,TDK,WALSIN,YAGEO,                         | 1    | C36,                       |
| 100 | 419313333060R | A | C SMD(0603) X7R 0.033uF/25V K RoHS       | DARFON,TDK,WALSIN,YAGEO,                         | 1    | C6,                        |
| 110 | 419311043060R | A | C SMD(0603) X7R 0.1uF/25V,K RoHS         | MURATA,TDK,WALSIN,YAGEO,                         | 2    | C13,C39,                   |
| 120 | 419311033060R | A | C SMD(0603) X7R 0.01uF/25V K RoHS        | DARFON,TDK,WALSIN,YAGEO,                         | 2    | C14,C838,                  |
| 130 | 419312213060R | A | C SMD(0603) X7R 220PF/25V K RoHS         | DARFON,TDK,WALSIN,YAGEO,                         | 2    | C37,C38,                   |
| 140 | 419312254070R | A | C SMD(0805) X7R 2.2uF 16V K RoHS         | DARFON,MURATA, SAMSUNG, TAIYO,TDK, WALSIN,YAGEO, | 3    | C1,C10,C4,                 |
| 140 | 419352254070R | A | C SMD(0805) X5R 2.2uF/16V K, RoHS        | DARFON,MURATA, SAMSUNG, TAIYO,TDK,WALSIN,YAGEO,  | 0    |                            |
| 140 | 419352255070R | A | C SMD(0805) X5R 2.2uF/10V K, RoHS        | DARFON,MURATA, SAMSUNG, TAIYO,TDK,WALSIN, YAGEO, | 0    |                            |
| 150 | 419313343070R | A | C SMD(0805) X7R 0.33uF/25V K,RoHS        | DARFON,MURATA, SAMSUNG, TAIYO,TDK,WALSIN,YAGEO,  | 1    | C5,                        |
| 160 | 414916000050R | A | RES SMD (0603) 0Ω J,RT RoHS              | TA-I,WALSIN,YAGEO,                               | 1    | L831,                      |
| 180 | 414916261210R | A | RES SMD (0603) 26.1KΩ F,RT RoHS          | TA-I,WALSIN,YAGEO,                               | 1    | R836,                      |
| 190 | 414908150910R | A | RES SMD (0805) 15Ω F,RT RoHS             | TA-I,WALSIN,YAGEO,                               | 1    | R837,                      |
| 200 | 414904499310R | A | RES SMD (1206) 499KΩ F,RT RoHS REV:A     | TA-I,WALSIN,YAGEO,                               | 3    | R838,R839, R840,           |
| 210 | 414904047450R | A | RES SMD (1206) 470KΩ J,RT RoHS           | TA-I,WALSIN,YAGEO,                               | 2    | R850,R851,                 |
| 220 | 414904010050R | A | RES SMD (1206) 10Ω J,RT RoHS             | TA-I,WALSIN,YAGEO,                               | 1    | R855,                      |
| 230 | 414908100210R | A | RES SMD (0805) 10KΩ F,RT RoHS REV:A      | TA-I,WALSIN,YAGEO,                               | 2    | R865,R890,                 |
| 240 | 414908330110R | A | RES SMD (0805) 3.3KΩ F,RT RoHS REV:A     | TA-I,WALSIN,YAGEO,                               | 3    | R868,R22, R24,             |
| 250 | 414908270310R | A | RES SMD (0805) 270KΩ F,RT RoHS           | TA-I,WALSIN,YAGEO,                               | 1    | R871,                      |
| 260 | 414908010150R | A | RES SMD (0805) 100Ω J,RT RoHS REV:A      | TA-I,WALSIN,YAGEO,                               | 1    | R876,                      |
| 270 | 414908100110R | A | RES SMD (0805) 1KΩ F,RT RoHS REV:A       | TA-I,WALSIN,YAGEO,                               | 1    | R875,                      |
| 310 | 414916100410R | A | RES SMD (0603) 1MΩ F,RT RoHS             | TA-I,WALSIN,YAGEO,                               | 3    | R7,R13, R14,               |
| 320 | 414916020410R | A | RES SMD (0603) 200KΩ F,RT RoHS           | TA-I,WALSIN,YAGEO,                               | 1    | R8,                        |
| 330 | 414908033050R | A | RES SMD (0805) 33Ω J,RT RoHS             | TA-I,WALSIN,YAGEO,                               | 4    | R15,R16, R17,R18,          |
| 340 | 414908330010R | A | RES SMD (0805) 330Ω F,RT,RoHS            | TA-I,WALSIN,YAGEO,                               | 4    | R31,R32, R33,R34,          |
| 350 | 414916470210R | A | RES SMD (0603) 47KΩ F,RT RoHS            | TA-I,WALSIN,YAGEO,                               | 1    | R5,                        |
| 360 | 414916680010R | A | RES SMD (0603) 680Ω F,RT RoHS            | TA-I,WALSIN,YAGEO,                               | 2    | R30,R35,                   |
| 370 | 414908360110R | A | RES SMD (0805) 3.6KΩ F,RT RoHS           | TA-I,WALSIN,YAGEO,                               | 1    | R872,                      |
| 390 | 411130656952R | A | ZENER 5.6V 0.5W BZT52C5V6-LF,S OD123(FRO | FRONTIER,                                        | 1    | D857,                      |
| 390 | 411120956950R | A | ZENER 5.6V 0.41W BZT52-C5V6,SO D123(PANJ | PANJIT,                                          | 0    |                            |
| 400 | 411020046090R | A | DIO 1N4148W 75V/0.15A(PEC)RoHS SOD-123   | PANJIT,                                          | 3    | D1,D2, D832,               |
| 400 | 411023004021R | B | DIO SN4148-LF 75V/0.15A SMD 1206 (FEC)Ro | FRONTIER,                                        | 0    |                            |
| 400 | 411020046310R | A | DIO 1N4148W-F 75V/0.15A(DIODES RoHS,SOD- | DIODES,                                          | 0    |                            |
| 420 | 412000582020R | A | IC SG5841JSZ SOP8(SG)RoHS                | SG,                                              | 1    | U830,                      |
| 430 | 412000531630R | A | IC OZ9937GN SOP16(O2 MICRO)ROHS          | O2,                                              | 1    | U1,                        |
| 440 | 411020026020R | A | DIO BAV99-LF 350mW 70V SOT-23 (FEC)RoHS  | FRONTIER,                                        | 6    | ZD1,ZD2, ZD3,ZD4, ZD5,ZD6, |
| 440 | 411020026090R | A | DIO BAV99 350mW 75V SOT-23(PEC RoHS      | PANJIT,                                          | 0    |                            |
| 440 | 411020026210R | A | DIO BAV99 350mW 70V SOT-23(PHI RoHS      | PHILIPS,                                         | 0    |                            |
| 440 | 411020026390R | A | DIO BAV99,SOT-23(INFINEON)RoHS           | INFINEON,                                        | 0    |                            |
| 450 | 791431410800R |   | PCBA,PWR&INV./B,AI,LE19D5-812 ROHS       |                                                  | 1    |                            |
| 460 | 414904020350R | A | RES SMD (1206) 20KΩ J,RT RoHS            | TA-I,WALSIN,YAGEO,                               | 1    | R854,                      |
| 470 | 414916180310R | A | RES SMD (0603) 180KΩ F,RT RoHS           | TA-I,WALSIN,YAGEO,                               | 1    | R6,                        |
| 480 | 419312220060R | A | C SMD(0603) X7R 2200PF/50V K RoHS        | DARFON,TDK,WALSIN,YAGEO,                         | 1    | C836,                      |
| 490 | 414908100910R | A | RES SMD(0805)10Ω F,RT ROHS               | TA-I,WALSIN,YAGEO,                               | 2    | R28,R29,                   |
| 500 | 511110001101R | A | SEAL-GLUE,3629,(LOCTITE)                 | EURO,                                            | 0.02 |                            |

| 500  | 511110001104R | A        | SEAL-GLUE,3611,(EURO)                    | EURO,                      | 0     |                               |
|------|---------------|----------|------------------------------------------|----------------------------|-------|-------------------------------|
| 500  | 511110001100R | A        | SEAL-GLUE,NE8800K,(FUJI)                 | FUJI,                      | 0     |                               |
| 500  | 511110000700R | A        | HERAEUS SMT-ADHESIVE,PD955PY(TAMURA)     | D-TEK,TAMURA,              | 0     |                               |
| 510  | 419314720070R | A        | C SMD(0805) X7R 4700PF/50V K ROHS        | DARFON,TDK,WALSIN,YAGEO,   | 1     | C35,                          |
| 530  | 414908047050R | A        | RES SMD (0805) 47Ω J,RT RoHS             | TA-I,WALSIN,YAGEO,         | 1     | R835,                         |
| 540  | 414904330110R |          | RES SMD (1206) 3.3KΩ F,RT ROHS           | TA-I,WALSIN,YAGEO,         | 1     | R834,                         |
| ITEM | P/N           | Revision | Description                              | Supplier                   | Usage | Location                      |
|      | 791431410800R |          | PCBA,PWR&INV./B,AI,LE19D5-812 ROHS       |                            |       |                               |
| 10   | 791431450800R |          | PCBA,PWR&INV./B,AI/A,LE19D5-812 ROHS     |                            | 1     |                               |
| 20   | 791431460800R |          | PCBA,PWR&INV./B,AI/R,LE19D5-812 ROHS     |                            | 1     |                               |
| ITEM | P/N           | Revision | Description                              | Supplier                   | Usage | Location                      |
|      | 791431450800R |          | PCBA,PWR&INV./B,AI/A,LE19D5-812 ROHS     |                            |       |                               |
| 10   | 411020053010R | A        | DIO HER108G 1000V/1A DO-41(TSC RoHS      | TSC,                       | 1     | D851,                         |
| 10   | 411032006020R | A        | DIO FR10-10-LF 1000V/1A AT(FRO NTIER)RoH | FRONTIER,                  | 0     |                               |
| 10   | 411032006040R | A        | DIO FR107 1000V/1A DO-41(MOSPE C)RoHS    | MOSPEC,                    | 0     |                               |
| 10   | 411020053090R | A        | DIO PS1010R 1000V/1A DO-41(PAN JIT)RoHS  | PANJIT,                    | 0     |                               |
| 20   | 411020064090R | A        | DIO ER104 400V/1A DO-41(PANJIT RoHS      | PANJIT,                    | 1     | D852,                         |
| 20   | 411032001020R | A        | DIO SF10-04-LF 400V/1A DO-41(F RONTIER)R | FRONTIER,                  | 0     |                               |
| 30   | 411130622011R | A        | ZENER 22V GDZ22A-LF DO-34(FRON TIER)RoHS | FRONTIER,                  | 1     | D858,                         |
| 30   | 411131422011R | A        | ZENER 22V 0.5W GDZ22A DO-35(WI LLAS)RoHS | WILLAS,                    | 0     |                               |
| 30   | 411130922011R | A        | ZENER22V 0.5W GDZ22A DO35(PANJIT)RoHS    | PANJIT,                    | 0     |                               |
| 40   | 411022003020R | A        | DIO 1N4148-LF 75V/0.15A AT (FEC)RoHS     | FRONTIER,                  | 2     | D3,D4,                        |
| 40   | 411022003210R | A        | DIO 1N4148 75V/0.2A AT (PHIL) RoHS       | PHILIPS,                   | 0     |                               |
| 40   | 411020048090R | A        | DIO 1N4148-35 75V/0.15A,DO35(P EC)RoHS   | PANJIT,                    | 0     |                               |
| 60   | 414040208540R | A        | RES FSM 1W 0.2Ω J,AT MINI RoHS           | FUTABA,QUEENMAO,TZAI YUAN, | 1     | R852,                         |
| 70   | 415224300140R |          | RES MF 1/4W 430Ω F,AT MINI               | QUEENMAO,TZAI YUAN,        | 1     | R867,                         |
| 80   | 414833004540R | A        | RES MG HV 1/2W 3MΩ 2KV J,AT RoHS         | KAMAYA,KOA,                | 2     | R20,R21,                      |
| 80   | 414730305540R | A        | RES MF HV 1/2Ws 3MΩ 3.5KV J,A T RoHS     | WELWYN,                    | 0     |                               |
| 80   | 414870305540R | A        | RES MG HV 1/2Ws 3MΩ 3KV J,AT RoHS        | QUEENMAO,                  | 0     |                               |
| 90   | 415310102540R | A        | RES MOF 1/8W 1KΩ J,AT,RoHS               | FUTABA,QUEENMAO,TZAI YUAN, | 2     | R3,R10,                       |
| 100  | 415211009140R | A        | RES MF 1/8W 10Ω F,AT,RoHS                | QUEENMAO,TZAI YUAN,        | 1     | R1,                           |
| 110  | 415211002140R | A        | RES MF 1/8W 10KΩ F,AT RoHS               | QUEENMAO,TZAI YUAN,        | 3     | R2,R4, R874,                  |
| 120  | 415310105540R | A        | RES MOF 1/8W 1M J,AT ROHS                | FUTABA,QUEENMAO,TZAI YUAN, | 1     | R11,                          |
| 130  | 415211543140R | A        | RES MF 1/8W 154KΩ F,AT RoHS              | QUEENMAO,TZAI YUAN,        | 1     | R12,                          |
| 140  | 415213002140R | A        | RES MF 1/8W 30KΩ F,AT,RoHS               | QUEENMAO,TZAI YUAN,        | 1     | R9,                           |
| 150  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 6MM         | HOTRON,YUANYE,             | 156   | J3,L859, L860,                |
| 150  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 6MM         | HOTRON,YUANYE,             | 0     |                               |
| 160  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 7.5MM       | HOTRON,YUANYE,             | 364   | J5,J7,J13, J14, J16, J17,J22, |
| 160  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 7.5MM       | HOTRON,YUANYE,             | 0     |                               |
| 170  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 10MM        | HOTRON,YUANYE,             | 208   | J2,J6, J12,J15,               |
| 170  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 10MM        | HOTRON,YUANYE,             | 0     |                               |
| 180  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 12.5MM      | HOTRON,YUANYE,             | 208   | J11,J20, J21,J23,             |
| 180  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 12.5MM      | HOTRON,YUANYE,             | 0     |                               |
| 190  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 15MM        | HOTRON,YUANYE,             | 52    | J4,                           |
| 190  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 15MM        | HOTRON,YUANYE,             | 0     |                               |
| 200  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 17.5MM      | HOTRON,YUANYE,             | 104   | J1,J8,                        |
| 200  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 17.5MM      | HOTRON,YUANYE,             | 0     |                               |
| 210  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 20MM        | HOTRON,YUANYE,             | 52    | J19,                          |
| 210  | 430405000000R | A        | JMPR ROLL/KG D=0.6mm,AT,RoHS 20MM        | HOTRON,YUANYE,             | 0     |                               |
| 220  | 491391400100R |          | PCB,PWR&INV./B,LE19D5 ROHS               | HUIHO,TATCHUN,             | 1     |                               |
| 230  | 506140005700R | A        | LABEL,BARCODE,BLANK,33x7mm, ROHS,FOR PCB | JIAYINMEI,KAIDA,           | 1     |                               |
| 240  | 411022020010R | A        | DIO P6KE200A 600W/100A DO-15(T SC)RoHS   | TSC,                       | 1     | D853,                         |
| 240  | 411022020020R | A        | DIO P6KE200A-LF 600W/100A DO-1 5(FRONTIE | FRONTIER,                  | 0     |                               |
| 240  | 411022020090R | A        | DIO P6KE200A 600W/100A,DO-15(P ANJIT)RoH | PANJIT,                    | 0     |                               |

| ITEM | P/N           | Revision | Description                              | Supplier                               | Usage | Location                    |
|------|---------------|----------|------------------------------------------|----------------------------------------|-------|-----------------------------|
|      | 791431460800R |          | PCBA,PWR&INV./B,AI/R,LE19D5-812 ROHS     |                                        |       |                             |
| 10   | 420421000530R | A        | CAP SD 10uF/50V M,VT 105 5x11 RoHS       | LELON,SAMXON,<br>SU'SCON,TEAPO,        | 1     | C857 ,                      |
| 20   | 420221000530R | A        | CAP HG 10uF 50V M,105 VT,5x11,RoHS       | SAMXON,SU'SCON,                        | 1     | C869,                       |
| 30   | 418210233030R | A        | CAP CD X7R 1000pF/1KV K,VT 2X7R102K102K5 | JNC,POE,SUCCESS(SEC),                  | 2     | C861,C876,                  |
| 40   | 418210311030R | A        | CAP CD Y5P 0.01uF 50V K,VT RoHS          | JNC,POE,SUCCESS(SEC),                  | 1     | C866,                       |
| 50   | 418210133030R | A        | CAP CD X7R 100pF 1KV K VT RoHS           | JNC,POE,SUCCESS(SEC),                  | 2     | C875,C41,                   |
| 70   | 412022002240R | A        | IC KA431AZ 1%,VT (FAIRCHILD) RoHS        | FAIRCHILD,                             | 1     | I851,                       |
| 70   | 412022002830R | A        | IC AS431 TO-92 VT(A1SEMI)RoHS            | A1SEMI,                                | 0     |                             |
| 70   | 412022002840R | A        | IC TL431ACLPG TO-92 1%,VT(ON)RoHS        | ON SEMI,                               | 0     |                             |
| 70   | 412022002440R | A        | IC AZ431BZ-ATRE1 TO-92(BCD) RoHS         | BCD,                                   | 0     |                             |
| 80   | 420424710231R | A        | CAP SD 470uF/25V M 105 VT 10x16 RoHS     | LELON,SAMXON,<br>SU'SCON,TEAPO,        | 3     | C856,C859C870,              |
| 90   | 430613850290R | A        | FUSE TIME LAG 5A/250V,8.5x8mm,RoHS       | BELFUSE,CONQUER,<br>LITTELFUSE,WALTER, | 1     | F850,                       |
| 100  | 420424710360R | A        | CAP SD 470UF/35V M 105 ST 10X20 ROHS     | LELON,SAMXON,<br>SU'SCON,TEAPO,        | 5     | C862,C864 C865,<br>C21 C22, |

## 3. PCBA OSD KEY BOM

20080126

| ITEM | P/N           | Revision | Description                               | Supplier            | Usage | Location                      |
|------|---------------|----------|-------------------------------------------|---------------------|-------|-------------------------------|
|      | 791431500000R |          | PCBA,KEYPAD(4fuction keys)BOARD,LE19D5ROH |                     |       |                               |
| 10   | 430639040060R |          | WFR 4P 1.25MM R/A SMD W/LOCK ROHS         | JOWLE,              | 1     | CN02,                         |
| 20   | 414916820110R | A        | RES SMD (0603) 8.2K F,RT,RoHS             | TA-I,WALSIN,YAGEO,  | 2     | R06,R04,                      |
| 30   | 414916470110R | A        | RES SMD (0603) 4.7K F,RT,RoHS             | TA-I,WALSIN,YAGEO,  | 2     | R05,R03,                      |
| 40   | 491391500000R |          | PCB,keypad (4fuction key)BOARD,LE19D5 RO  | HUIHO,TATCHUN,      | 1     |                               |
| 50   | 430602980110R | A        | SW TACT 160gf 1P,R/A SMD 1BT00 2-0120L,R  | ALPS,HUA-JIE,ZJGHJ, | 4     | S02,S03,S04,S05,              |
| 60   | 511130002200R | A        | SOLDER PASTE,Sn96.5-Ag3.0-Cu0.5 ROHS      | TOMAS,              | 0.08  |                               |
| 60   | 511130002201R | A        | SOLDER PASTE,Sn96.5%Ag3.0%Cu0.5%          | TOMAS,              | 0     |                               |
| 60   | 511130002202R | A        | SOLDER PASTE,Sn95.5%Ag3.9%Cu0.6%          | TAMURA,             | 0     |                               |
| 70   | 411131562950R | A        | ZENER 6.2V BZT52C6V2-7-F SOD-123(DIODES)  | DIODES,             | 6     | ZD02,ZD03,ZD04,ZD05,ZD06,ZD07 |
| 70   | 411121462950R | A        | ZENER 6.2V BZT52-C6V2 SOD-123(WILLAS)ROH  | WILLAS,             | 0     |                               |
| 70   | 411130962950R | A        | ZENER 6.2V MMSZ5234B SOD-123(PANJIT)RoH   | PANJIT,             | 0     |                               |

## 4. PCBA POWER KEY BOM

20080125

| ITEM | P/N           | Revision | Description                                  | Supplier         | Usage | Location |
|------|---------------|----------|----------------------------------------------|------------------|-------|----------|
|      | 791431500010R |          | PCBA,KEYPAD(power key +LED)BOARD,LE19D5R     |                  |       |          |
|      | 791431540010R |          | PCBA,KEYPAD(power key +LED)BD,SMT LE19D5ROHS |                  |       |          |
| 10   | 430602680120R |          | SW,METAL DOME 180gf 1P ROHS                  | FOXCONN,HUA-JIE, | 1     | S01      |
| 50   | 511130002200R | A        | SOLDER PASTE,Sn96.5-Ag3.0-Cu0.5 ROHS         | TOMAS,           | 0.08  |          |
| 50   | 511130002201R | A        | SOLDER PASTE,Sn96.5%Ag3.0%Cu0.5%             | TOMAS,           | 0     |          |
| 50   | 511130002202R | A        | SOLDER PASTE,Sn95.5%Ag3.9%Cu0.6%             | TAMURA,          | 0     |          |
|      | 791431540010R |          | PCBA,KEYPAD(power key +LED)BD,SMT LE19D5ROHS |                  |       |          |
| 20   | 430639040050R |          | WFR 4P 1.25MM V/A SMD W/LOCK ROHS            | JOWLE,           | 1     | CN01,    |

|                    |                                                |                  |   |        |
|--------------------|------------------------------------------------|------------------|---|--------|
| 30 411070133500R   | LED SMD LTW-C195UCKS-5A(liteon) Rohs           | LITEON,          | 1 | LED01, |
| 411070141500R      | LED SMD W/Y KPTB-1612FX385-SZ(Kingbright) Rohs | Kingbright       | 0 |        |
| 40 491391500100R   | PCB,keypad (power key +LED)BOARD,LE19D5        | EXPRESS,TIP TOP, | 1 |        |
| 60 411101756950R A | ZENER 5.6V MMPZ5232BPT SOD323(Chenmko)Ro       | CHENMKO,         | 1 | ZD01   |
| 60 411100956952R A | ZENER 5.6V BZT52-C5V6S SOD323(PANJIT)Ro        | PANJIT,          | 0 |        |

## 5. Assembly BOM

20080125

| ITEM | P/N           | Description                              | Supplier                             | Usage | Un | Revision |
|------|---------------|------------------------------------------|--------------------------------------|-------|----|----------|
|      | 8191D551D010R | LE19D5-512(B)W/O SPK,US(DAO/S1909W)      |                                      |       |    |          |
| 10   | 453010100320R | CABLE D-SUB 15P MALE 6FT BLACK/BLUE AB 8 | FOXCONN,GREATLANE,<br>HOTRON,JVE,廣宇, | 1     | PC | B        |
| 20   | 453030300440R | CABLE DVI-D 18+1P MALE 1.8M BLACK ROHS   | FOXCONN,GREATLANE,<br>HOTRON,JVE,廣宇, | 1     | PC | A        |
| 30   | 453070800150R | PWR CORD 10A/125V BLK 6FT UL/CSA SVT 3Cx | FOXCONN,I-SHENG,                     | 1     | PC | C        |
| 40   | 714072850000R | ASSY,FINAL(B)W/O SPK,LE19D5-512(S1909W)  |                                      | 1     | PC | A        |
| 50   | 713100002400R | ASSY, PACKAGE, PACK, DAO, LE19D5         |                                      | 1     | PC | A        |

20080703

| ITEM | P/N           | Description                              | Supplier | Usage   | Un  | Revision |
|------|---------------|------------------------------------------|----------|---------|-----|----------|
|      | 713100002400R | ASSY, PACKAGE, PACK, DAO, LE19D5         |          |         |     | A        |
| 10   | 506140005800R | LABEL BARCODE LE1963                     |          | 1       | PC  | B        |
| 20   | 506250021100R | LABEL,AGENCY, LE19D5                     |          | 1       | PC  | A        |
| 30   | 506431005000R | FILM,SCREEN,PROTECTION,PRINTED,LE19A2    |          | 1       | PC  | A        |
| 40   | 506380001400R | TAPE 3M-897 12x45000mm                   |          | 0.00333 | ROL | A        |
| 50   | 506280007200R | POSTER,QUICK SETUP, WEST,LE19D5          |          | 1       | PC  | A        |
| 60   | 703000017100R | KIT,ACCESSORY, DOC, DAO, LE19D5          |          | 1       | PC  | A        |
| 90   | 506120009300R | BAG,PLASTIC,L300xW250mm(PRINTED), LE19D5 |          | 1       | PC  | A        |
| 100  | 506120009310R | BAG,PLASTIC,L550xW550mm(PRINTED), LE19D5 |          | 1       | PC  | A        |
| 110  | 506020022700R | CARTON,DELL(WWW), LE19D5                 |          | 1       | PC  | A        |
| 120  | 506060009100R | CUSHION TOP FOR LE19D5                   |          | 1       | PC  | A        |
| 130  | 506060009110R | CUSHION BOTTOM FOR LE19D5                |          | 1       | PC  | A        |
| 140  | 506060009120R | EPE CUSHION FOR LE19D5                   |          | 1       | PC  | A        |
| 150  | 506340004700R | LABEL BLANK 101X50mm DELL EMEA CARTON    |          | 1       | PC  | A        |
| 160  | 506380002622R | TAPE, WRAPPING TYPE PRINTED(DELL), BLACK |          | 0.00153 | ROL | A        |
| 170  | 713000095901R | ASSY PACK,40STD,LE19D5                   |          | 1       | PC  | A        |
| 170  | 713000095900R | ASSY PACK,20STD,LE19D5                   |          | 0       | PC  | A        |
| 170  | 713000095902R | ASSY PACK,40HQ,LE19D5                    |          | 0       | PC  | A        |
| 170  | 713000095908R | ASSY PACK,AIR CARGO(20STD),LE19D5        |          | 0       | PC  | A        |
| 170  | 713000095903R | ASSY PACK,AIR CARGO(40STD), LE19D5       |          | 0       | PC  | A        |

20080126

| ITEM | P/N           | Description                             | Supplier | Usage | Un | Revision |
|------|---------------|-----------------------------------------|----------|-------|----|----------|
|      | 714072850000R | ASSY,FINAL(B)W/O SPK,LE19D5-512(S1909W) |          |       |    | A        |
| 10   | 503020004500R | RUBBER,FOOT,10*3,for cmo                | 久威,      | 2     | PC | A        |
| 20   | 509212103500R | SCREW,F,CROSS,T.T-2*3,BLK               | 高億,      | 1     | PC | A        |
| 30   | 509116610510R | SCREW,P,CROSS,M4*10,BLACK-NL(NYLOK)     | 立侑,高億,   | 4     | PC | A        |
| 40   | 714050014900R | ASSY,BACK COVER,LE19D5                  | MMP,     | 1     | PC | A        |
| 50   | 714011202600R | ASSY STAND LE19D5                       | CJC,富鴻齊, | 1     | PC | A        |
| 60   | 714030016310R | ASSY,FRONT BEZEL(For CMO panel)L,LE19D5 | MMP,     | 1     | PC | A        |
| 70   | 714082850000R | ASSY,PANEL,W/O SPK,LE19D5-512(S1909W)   |          | 1     | PC | A        |

## 20080703

| ITEM | P/N           | Description                              | Supplier   | Usage | Un  | Revision |
|------|---------------|------------------------------------------|------------|-------|-----|----------|
|      | 713000095900R | ASSY PACK,20STD,LE19D5                   |            |       |     | A        |
| 10   | 506432003500R | SLIP SHEET,L1320xW1062xH100mm, LE19D5    | SUNSTREAM, | 0     | PC  | A        |
| 20   | 506037009100R | CARDBOARD,COVER,L1320xW1062xH100xT3mm,LE | 佳藝,美盈森,    | 0     | PC  | A        |
| 30   | 506039008800R | CORNER PAPER 1060x50x50xT3mm LE1963      | 佳藝,        | 0     | PC  | A        |
| 40   | 506431000300R | FILM,PE 500mmx900M ROHS                  | 三輝,柏興,     | 0     | ROL | A        |
| 50   | 506120400100R | BAG AIR DUNNAGE 2000x1000mmLE1X03 ROHS   | SISUN,     | 0     | PC  | A        |
| 60   | 506380002612R | TAPE,WRAPPING TYPE,50Mx82mm              | 佳普森,       | 0     | ROL | A        |

## 20080703

| ITEM | P/N           | Description                              | Supplier   | Usage   | Un  | Revision |
|------|---------------|------------------------------------------|------------|---------|-----|----------|
|      | 713000095901R | ASSY PACK,40STD,LE19D5                   |            |         |     | A        |
| 10   | 506432003500R | SLIP SHEET,L1320xW1062xH100mm, LE19D5    | SUNSTREAM, | 0.02083 | PC  | A        |
| 20   | 506037009100R | CARDBOARD,COVER,L1320xW1062xH100xT3mm,LE | 佳藝,美盈森,    | 0.04167 | PC  | A        |
| 30   | 506039008800R | CORNER PAPER 1060x50x50xT3mm LE1963      | 佳藝,        | 0.08333 | PC  | A        |
| 40   | 506431000300R | FILM,PE 500mmx900M ROHS                  | 三輝,柏興,     | 0.00165 | ROL | A        |
| 50   | 506120400100R | BAG AIR DUNNAGE 2000x1000mmLE1X03 ROHS   | SISUN,     | 0.00232 | PC  | A        |
| 60   | 506380002612R | TAPE,WRAPPING TYPE,50Mx82mm              | 佳普森,       | 0.00028 | ROL | A        |

## 20080703

| ITEM | P/N           | Description                              | Supplier   | Usage | Un  | Revision |
|------|---------------|------------------------------------------|------------|-------|-----|----------|
|      | 713000095902R | ASSY PACK,40HQ,LE19D5                    |            |       |     | A        |
| 10   | 506432003500R | SLIP SHEET,L1320xW1062xH100mm, LE19D5    | SUNSTREAM, | 0     | PC  | A        |
| 20   | 506037009100R | CARDBOARD,COVER,L1320xW1062xH100xT3mm,LE | 佳藝,美盈森,    | 0     | PC  | A        |
| 30   | 506039007210R | CORNER PAPER 1200x50x50xT3mm LE1718      | 佳藝,金惠,     | 0     | PC  | A        |
| 40   | 506431000300R | FILM,PE 500mmx900M ROHS                  | 三輝,柏興,     | 0     | ROL | A        |
| 50   | 506120400100R | BAG AIR DUNNAGE 2000x1000mmLE1X03 ROHS   | SISUN,     | 0     | PC  | A        |
| 60   | 506380002612R | TAPE,WRAPPING TYPE,50Mx82mm              | 佳普森,       | 0     | ROL | A        |

## 20080724

| ITEM | P/N           | Description                              | Supplier | Usage | Un  | Revision |
|------|---------------|------------------------------------------|----------|-------|-----|----------|
|      | 713000095903R | ASSY PACK,AIR CARGO(40STD), LE19D5       |          |       |     | A        |
| 10   | 506150005200R | PALLET L1139xW1310xH120mm LE1730         | 惠達,實習工廠, | 0     | PC  | C        |
| 20   | 506037009100R | CARDBOARD,COVER,L1320xW1062xH100xT3mm,LE | 佳藝,美盈森,  | 0     | PC  | A        |
| 30   | 506039006900R | CORNER PAPER 950x50x50xT3mm LE1712       | 佳藝,金惠,   | 0     | PC  | A        |
| 40   | 506039001400R | CORNER PAPER 200x50x50mm ROHS            | 佳藝,金惠,   | 0     | PC  | A        |
| 50   | 506431000300R | FILM,PE 500mmx900M ROHS                  | 三輝,柏興,   | 0     | ROL | A        |
| 60   | 506380002612R | TAPE,WRAPPING TYPE,50Mx82mm              | 佳普森,     | 0     | ROL | A        |

## 20080724

| ITEM | P/N           | Description                              | Supplier | Usage | Un  | Revision |
|------|---------------|------------------------------------------|----------|-------|-----|----------|
|      | 713000095908R | ASSY PACK,AIR CARGO(20STD),LE19D5        |          |       |     | A        |
| 10   | 506150005200R | PALLET L1139xW1310xH120mm LE1730         | 惠達,實習工廠, | 0     | PC  | C        |
| 20   | 506037009100R | CARDBOARD,COVER,L1320xW1062xH100xT3mm,LE | 佳藝,美盈森,  | 0     | PC  | A        |
| 30   | 506039006900R | CORNER PAPER 950x50x50xT3mm LE1712       | 佳藝,金惠,   | 0     | PC  | A        |
| 40   | 506039001400R | CORNER PAPER 200x50x50mm ROHS            | 佳藝,金惠,   | 0     | PC  | A        |
| 50   | 506431000300R | FILM,PE 500mmx900M ROHS                  | 三輝,柏興,   | 0     | ROL | A        |
| 60   | 506120400100R | BAG AIR DUNNAGE 2000x1000mmLE1X03 ROHS   | SISUN,   | 0     | PC  | A        |



70 506380002612R TAPE,WRAPPING TYPE,50Mx82mm 佳普森, 0 ROL A

## 20080626

| ITEM | P/N               | Description                             | Supplier | Usage | Un | Revision |
|------|-------------------|-----------------------------------------|----------|-------|----|----------|
|      | 714030016310R     | ASSY,FRONT BEZEL(For CMO panel)L,LE19D5 |          |       |    | A        |
| 10   | 501010216310R     | FRONT BEZEL(For CMO panel)L,LE19D5      |          | 1     | PC | A        |
| 20   | 3C0702200-000-GX2 | LOGO PLATE,DELL,LE19D5                  |          | 1     | PC |          |
| 30   | 501030209810R     | POWER BUTTON(For CMO panel),LE19D5      |          | 1     | PC | A        |
| 40   | 3B3519E00-000-GX2 | BEZEL RIGHT PROTECTIVE FILM             |          | 1     | PC |          |

## 20080703

| ITEM | P/N           | Description            | Supplier | Usage | Un | Revision |
|------|---------------|------------------------|----------|-------|----|----------|
|      | 714050014900R | ASSY,BACK COVER,LE19D5 |          |       |    | A        |
| 10   | 501020220600R | BACK COVER,LE19D5      |          | 1     | PC | A        |
| 20   | 501030209820R | OSD BUTTON,LE19D5      |          | 1     | PC | A        |
| 30   | 502210100400R | KENSINGTON LOCK LE1963 |          | 1     | PC | A        |

## 20080310

| ITEM | P/N            | Description                               | Supplier            | Usage | Un | Revision |
|------|----------------|-------------------------------------------|---------------------|-------|----|----------|
|      | 714082850000R  | ASSY,PANEL,W/O SPK,LE19D5-512(S1909W)     |                     |       |    | A        |
| 10   | 631102090920RD | LCD PANEL 19" M190A1-L07-A(A)(CMO)RoHS    |                     | 1     | PC | A        |
| 20   | 509146306200R  | SCREW,P,CROSS,W/WAS,M3*6,Zn-Cc            | 立侑,高億,              | 4     | PC | A        |
| 30   | 509446309100R  | SCREW,B,CROSS,W/W-SPR,M3*9,Zn,ROHS        | 立君,卓越,              | 2     | PC | A        |
| 40   | 509016304200R  | SCREW,I,CROSS,M3*4,Zn-CcROHS              | 高億,                 | 4     | PC | A        |
| 50   | 509016306200R  | SCREW,I,CROSS,M3*6,Zn-Cc                  | 高億,                 | 2     | PC | A        |
| 60   | 509000001000R  | BOLT,#4-40x12.5,Ni ROHS                   | 高億,                 | 4     | PC | A        |
| 70   | 505040208500R  | INSULATOR,MYLAR,CHASSIS 02,LE19D5         | 久威,富准,              | 1     | PC | A        |
| 80   | 506380001730R  | TAPE ACE 85x20mm LE1913                   | 久威,                 | 1     | PC | A        |
| 90   | 505040202600R  | INSULATOR MYLAR PANEL LP1903 ROHS         | 久威,富創橡塑,            | 1     | PC | A        |
| 100  | 701000007610R  | ASSY,CHASSIS(For CMO panel),FOR LE19D5    | MMP,                | 1     | PC | A        |
| 110  | 791431400800R  | PCBA,PWR&INV./B,LE19D5-812 ROHS           |                     | 1     | PC | AA       |
| 120  | 791431300500R  | PCBA,I/F BOARD,W/O SPK LE19D5-512 ROHS    |                     | 1     | PC |          |
| 130  | 430300801840R  | HRN ASS'Y 2x4P to 4P 375mm433mmUL1571#2   | GREATLANE,HEIGHTEN, | 1     | PC | A        |
| 140  | 430303001590R  | HRN LVDS FFC 30P 185mm Core RoHs          | P-TWO,              | 1     | PC | A        |
| 150  | 791431500000R  | PCBA,KEYPAD(4function key)BOARD,LE19D5ROH |                     | 1     | PC | AA       |
| 160  | 791431500010R  | PCBA,KEYPAD(power key +LED)BOARD,LE19D5R  |                     | 1     | PC | AA       |

## 20080626

| ITEM | P/N               | Description                          | Supplier | Usage | Un | Revision |
|------|-------------------|--------------------------------------|----------|-------|----|----------|
|      | 501030209810R     | POWER BUTTON(For CMO panel),LE19D5   |          |       |    | A        |
| 10   | 1B01Q5F00-600-GX2 | BUTTON,POWER,PAINTING,FOR CMO,LE19D5 |          | 1     | PC |          |

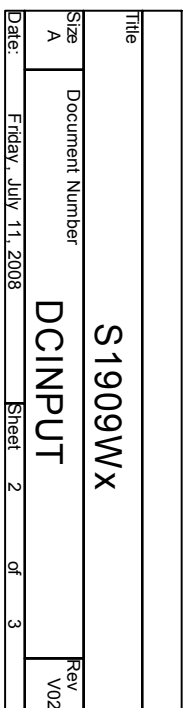
## 20080117

| ITEM | P/N           | Description                            | Supplier | Usage | Un | Revision |
|------|---------------|----------------------------------------|----------|-------|----|----------|
|      | 701000007610R | ASSY,CHASSIS(For CMO panel),FOR LE19D5 |          |       |    | A        |
| 10   | 502090310810R | CHASSIS(For CMO panel),FOR LE19D5      |          | 1     | PC | A        |
| 20   | 502040400600R | SHIELD EMI LP2207                      |          | 4     | PC | A        |

## Attachment 2- Schematic



|       |                        |         |        |
|-------|------------------------|---------|--------|
| Title |                        | S1909WX |        |
| Size  | Document Number        | Rev     |        |
| C     | INPUT                  | 10      |        |
| Date  | Saturday, May 31, 2008 | Sheet   | 1 of 3 |









2. Power board schematic

Dell S1909WXf Power/Inverter Schematic Diagram

SEC/MO PANEL

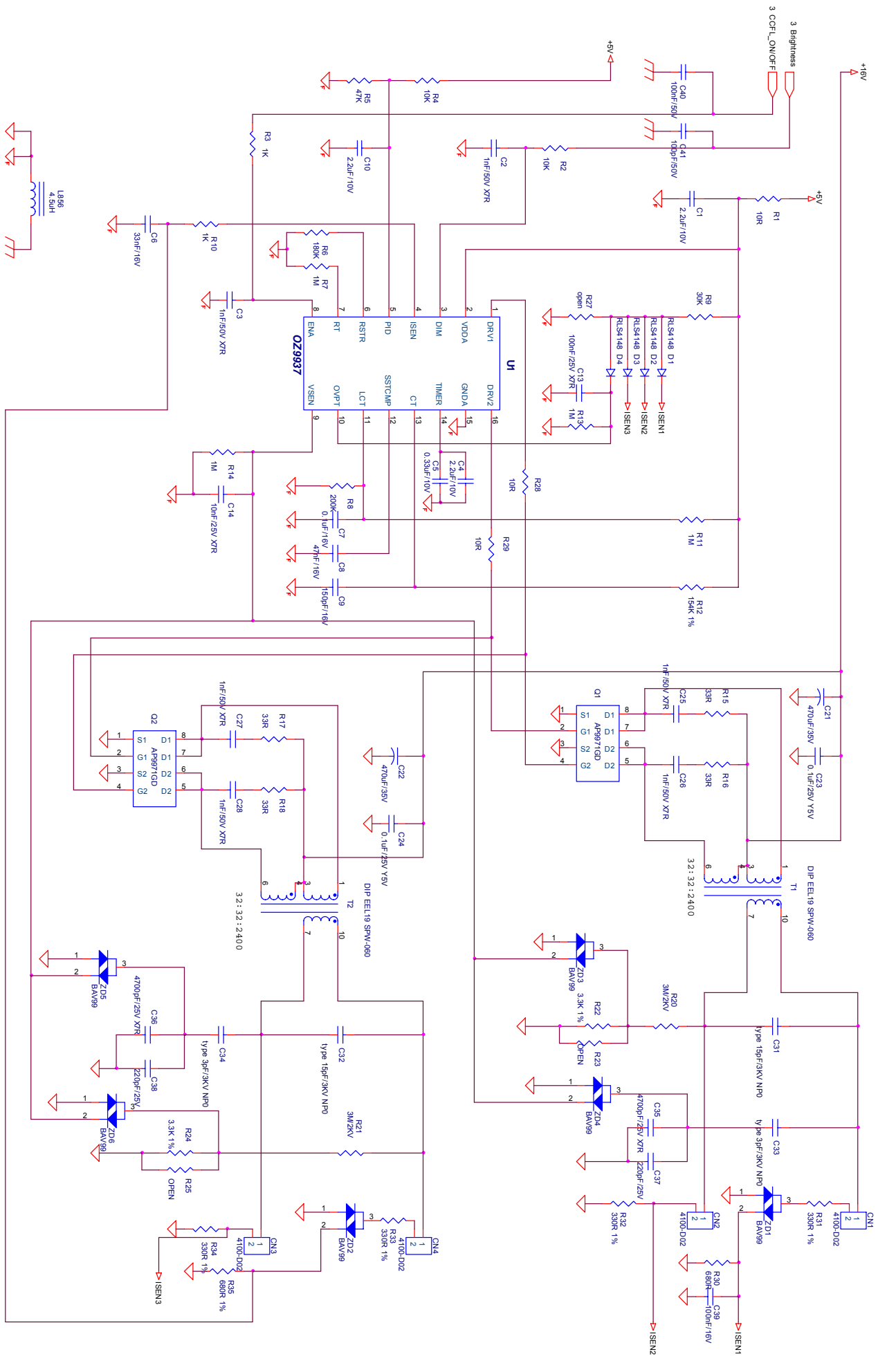
| SCHEMATIC             | SHEET |
|-----------------------|-------|
| 1.0 Contents          | 1     |
| 2.0 Power AC to DC    | 2     |
| 3.0 Inverter DC to AC | 3     |
|                       |       |
|                       |       |
|                       |       |
|                       |       |
|                       |       |
|                       |       |

| Reversion of History |                                      |
|----------------------|--------------------------------------|
| REV1                 |                                      |
| REV2                 | Open the components in audio circuit |
| REV3 for MP          |                                      |

|                                     |                 |        |  |
|-------------------------------------|-----------------|--------|--|
| FOXCONN                             |                 |        |  |
| Title 1.0 Content for DELL S1909WXf |                 |        |  |
| Size A3                             | Document Number | Rev 02 |  |
| Date Wednesday, July 09, 2008       | Sheet 1         | of 3   |  |



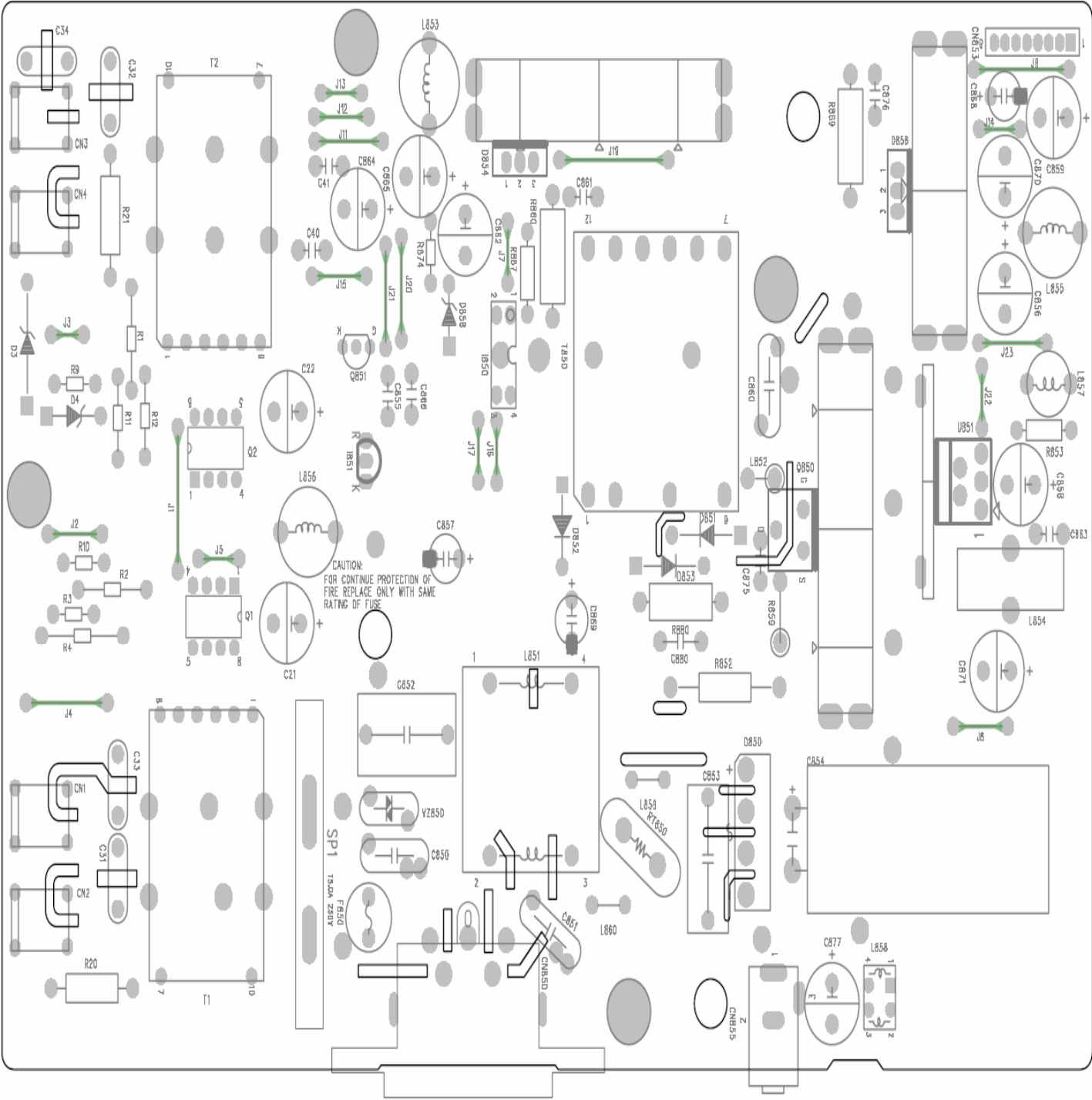
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|-----------------------------|--------------------------|-------|--------|------|
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| 2.0 Power for Dell S1909Wxf |                          |       |        |      |
| Size A3                     |                          |       | Rev 02 |      |
| Document Number <Doc>       |                          |       |        |      |
| Date:                       | Wednesday, July 09, 2008 | Sheet | 2      | of 3 |



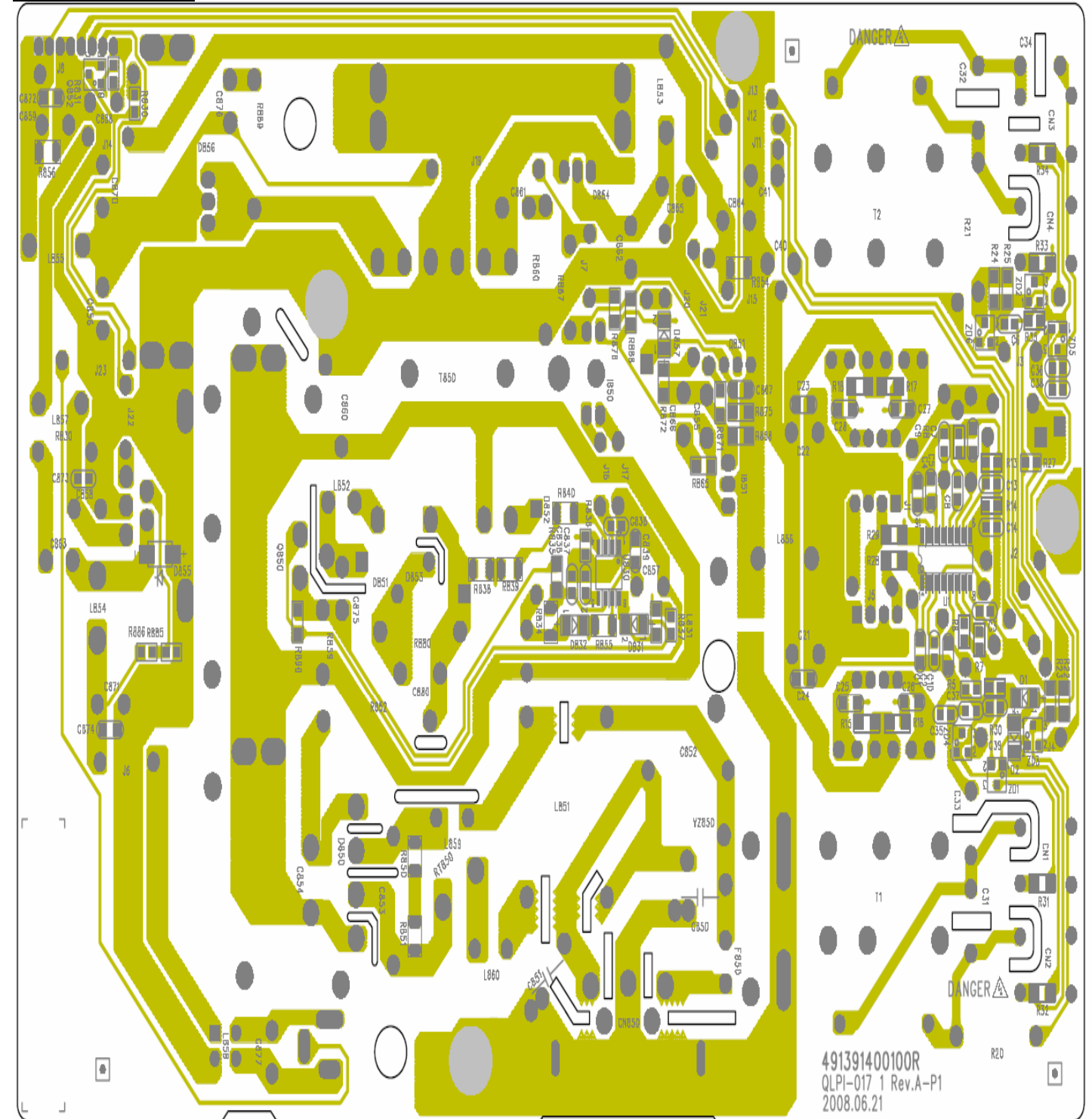
| Title                                    |                 |
|------------------------------------------|-----------------|
| 3.0 DC to AC Inverter for DELL S1909W/XF |                 |
| Size                                     | Document Number |
| A3                                       | 02              |
| Date                                     | Sheet           |
| Wednesday, July 09, 2008                 | 3 of 3          |

Attachment 3- PCB Layout power/inverter bd:

Power/inverter bd:  
Top Layer



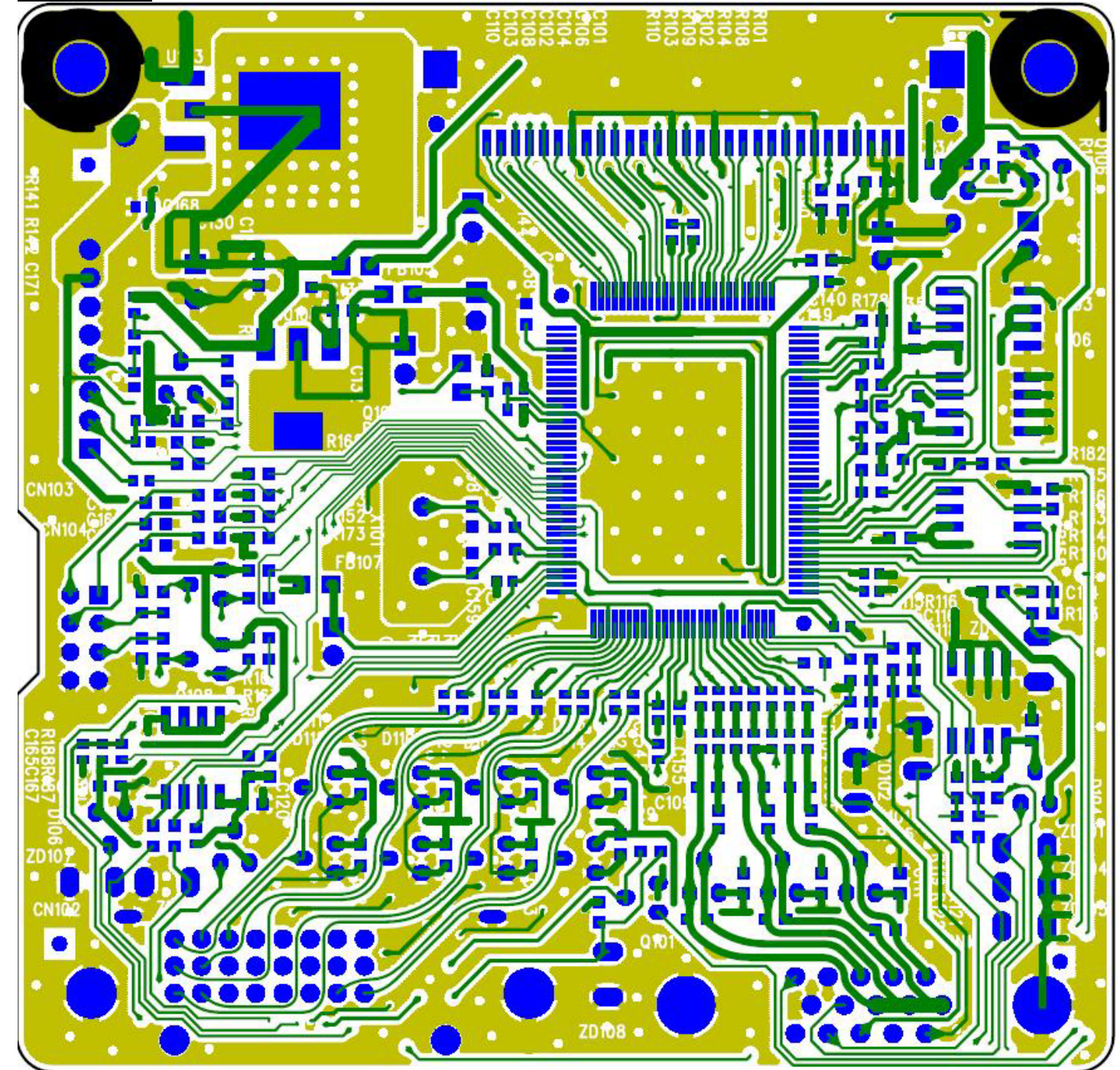
|         |         |               |        |            |                      |
|---------|---------|---------------|--------|------------|----------------------|
| Innolux | LAYER   | DRAWING       |        |            |                      |
|         | PCB NO  | 491391400100R | REV    | A-P1       | DESIGNER: Apple Chen |
|         | FILE NO | QLPI-017 1    | REMARK | 2008.06.21 |                      |



|         |         |                   |            |                      |
|---------|---------|-------------------|------------|----------------------|
| Innovux | LAYER   | 2ILKSCREEN BOTTOM |            |                      |
|         | PCB NO  | REV               | A-P1       | DESIGNER: Apple Chen |
|         | FILE NO | REMARK            | 2008.06.21 |                      |

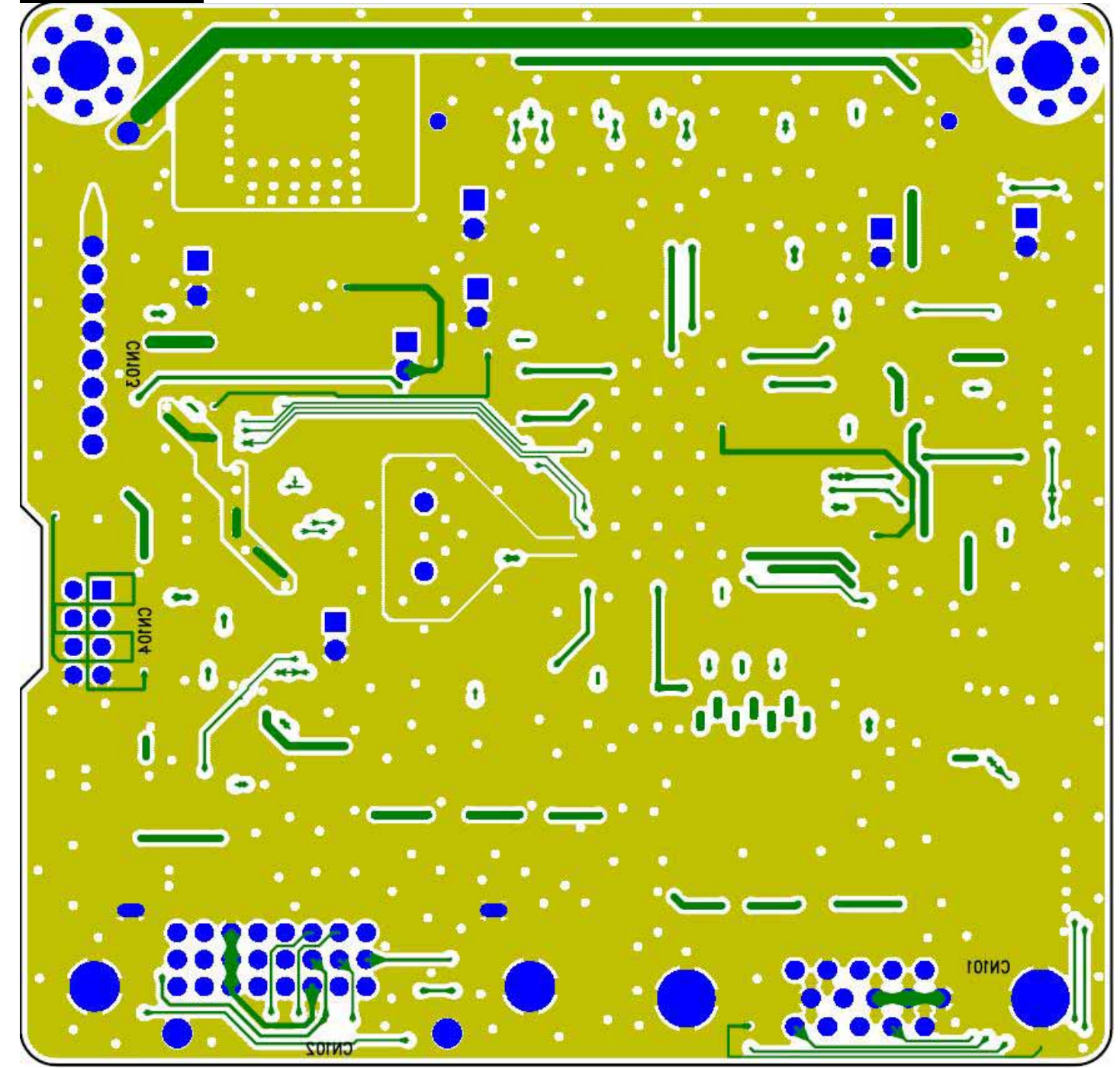


I/F board:  
Top Layer



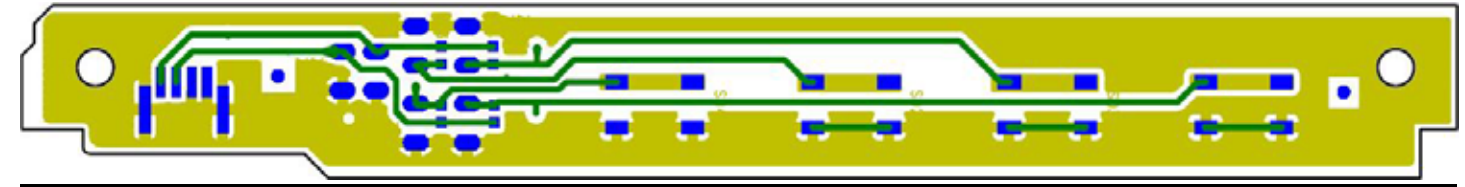


Bottom Layer

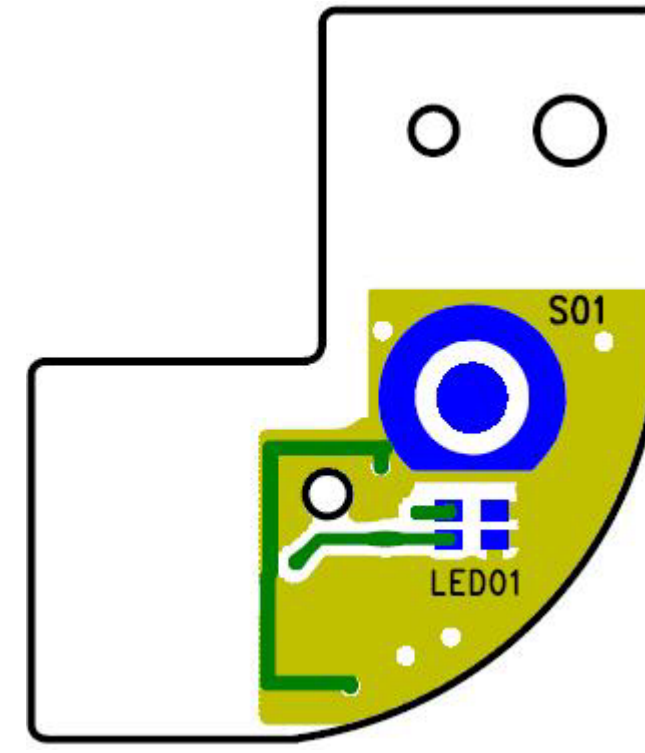




**Keypad:**  
**Top Layer**



**Power key:**  
**Top Layer**



**Bottom Layer**

